Faculty of Education

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Title: **Peer relationships and the wellbeing of children with Developmental Language Disorder**

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To my family

Declaration

This thesis is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the preface and specified in the text.

It is not substantially the same as any work that has already been submitted before for any degree or other qualification except as declared in the preface and specified in the text.

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Peer relationships and the wellbeing of children with Developmental Language Disorder

Lenka Janik Blaskova

Abstract

Children with Developmental Language Disorder (DLD) have difficulties expressing or understanding language without having any other neurodevelopmental condition or physical impairment. DLD places affected children at risk of many undesired developmental outcomes. Peer relationships of children with DLD are impacted the most; however, many children with DLD are accepted by their peers and report having good quality friendships.

To understand the links between language and peer relationships of children with DLD, scholars have examined children's language, behaviour, and other psychosocial attributes. Research findings, however, are inconclusive about the relative contribution of these factors, and what is more, they tend to overly rely on adult informants whose reports of children's language, behaviours, and social functioning vary.

This doctoral research project actively involved children with DLD and their peers to learn directly from children about their peer relationships. These aims were delivered through two parts – analytical research synthesis (systematised literature review) and primary data collection (series of case studies). Both parts helped answer the project's research questions: *1. What are the within-child characteristics promoting the peer relationships of children with DLD? 2. What research methods facilitate the participation of children with DLD in studies about their peer relationships in school?*

A mixed methods approach was taken to combine quantitative and qualitative data. In part one, the analytical research synthesis, identified studies were reviewed and categorised based on the levels of children's participation in the research. A narrative analysis synthetised the studies' findings about the within-child characteristics contributing to the peer relationships of children with DLD. Part two was conducted as a series of case studies, where each child

with DLD (n=14) represented a case. Data were collected via parent and teacher reports, observations, sociometric methods, interviews with a friend, and one-to-one meetings that involved language and nonverbal ability assessments, friendship, and wellbeing interviews. A child-centred approach was adopted, including visual supports and art-based tools, to facilitate children's active engagement in one-on-one meetings. Part two data were analysed through within and cross-case analyses, framework analysis, and friendship formation assessment. Findings from both parts are brought together in a discussion answering the overarching research questions.

This project identified that the quantity and quality of language and behaviours of children with DLD need to be considered as distinct contributors to their peer relationships. It further specified self-perception and self-awareness as within-child factors contributing to the peer relationships of children with DLD. Finally, this project revealed peer's inclusive attitudes as within-child factors promoting the peer relationships of children with DLD.

Regarding methods facilitating the participation of children with DLD in studies about their peer relationships, this project identified few studies directly involving children. There are, however, excellent examples of visual support and art-based methods supporting the participation of children with DLD in research.

This project updates our knowledge and existing models linking language and children's social adjustments by identifying within-child factors that need to be considered in future studies. It further demonstrates that it is possible to elicit the voice of children with DLD in studies about their social lives. Together with their peers, children reveal factors that are meaningful to them and their peer relationships. These findings have direct implications for the social inclusion of children with DLD in school, their speech and language therapy outcomes, and future research. Children with DLD and their peers need to be considered as active agents in matters that impact their social lives.

Acknowledgments

Completing my doctoral research project, I feel deeply indebted to many great people, who have inspired and supported me during my studies at the University of Cambridge and the writing of this dissertation.

First of all, I would like to thank my supervisor, Dr Jenny Gibson, for guiding me through this journey with insightful feedback, discussions, and for her encouragement that saw me through this project from my initial ideas until its realisation. I am grateful to the Cambridge Trust and the LEGO foundation for the full scholarship at the University of Cambridge.

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I would like to thank all children who joined my project and allowed me to learn about their peer relationships and social world. I also very much appreciate their parents, teachers, and schools that participated in my project and dedicated their time and efforts to inform my project.

My doctoral journey would not be half the fun without all my fellow students in the Play, Education, Development and Learning research centre, Play and Language research group led by Dr Gibson, and the Faculty of Education. Thank you all for sharing the highs and lows of our PhDs, and for being inspiring and supportive friends. I would particularly like to thank to Mélanie, Emma, Emily, Sylvana, and Tanya for their help during writing up my dissertation. Mél, thank you for your encouragement, for sharing the excitement from organising DLD awareness events with me, and for being an absolute treasure.

I also cannot appreciate enough my friend Kasia, who has been my companion since I started my psychology studies. I take inspiration from our sparkling conversations, when we share our passion for helping others tap into their potential and improve their wellbeing.

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List of abbreviations

ACE	Assessment of Comprehension and Expression
ADHD	Attention Deficit Hyperactivity Disorder
APA	American Psychological Association
ASD	Autistic Spectrum Disorder
ASHA	American Speech-Language-Hearing Association
BERA	British Education Research Association
CCC	Children's Communication Checklist
CELF	Clinical Evaluation of Language Fundamentals
CPM	Coloured Progressive Matrices
cwDLD	children with Developmental Language Disorder
DfE	Department for Education
DLD	Developmental Language Disorder
DSM	Diagnostic and Statistical Manual
EP	Enhanced Provision
FA	Framework Analysis
GCC	General Communication Composite
GDPR	General Data Protection Regulation
ICD	International Classification of Diseases
IPEN	International Positive Education Network
MC	Mainstream class
PLI	pragmatic language impairment
RCSLT	Royal College of Speech and Language Therapists
ROI	Republic of Ireland
SAM	Social Adaptation Model
SDM	Social Deviance Model
SEN	special education needs
SDQ	Strengths and Difficulties Questionnaire
SLI	specific language impairment
SLCN	Speech, Language, and Communication Needs
SSLD	Specific Speech & Language Disorder Class
TD	typically developing
TEC	Test of Emotion Comprehension
UK	the United Kingdom
US	the United States

Overview of the research project

This doctoral research investigates the peer relationships of children with Developmental Language Disorder (DLD). The project is split into two parts – systematised literature review and series of case studies. Results are presented in separate chapters. Some of the result chapters are drafted as research articles. This thesis format leads to some repetition of key project details. In this section, I will outline the project and the contents of this thesis.

The thesis starts with positioning the topic of peer relationships of children with DLD within the fields of developmental psychology and education (Chapter 1). The impact of DLD is described in the areas of developmental outcomes, education, and employability. The role of education is asserted as supporting the language and communication needs of children with DLD as well as children's holistic development. Chapter 1 includes the project background, including my professional and personal experience, my interests, and values guiding the project.

Chapter 2 gives overview of the key concepts underpinning the entire project. It outlines the current debates about DLD, models linking DLD and social-emotional development, and research about the determinants of peer relationships of children with DLD. Social competence and wellbeing are discussed individually as they are considered as specific contributors to the peer relationships in this project. Next, current policies and practice of social inclusion of children with DLD are discussed within the context of education. Chapter 2 concludes by specifying the projects aims and research questions:

1. What are the within-child characteristics that promote the peer relationships of children with DLD?
2. What research methods facilitate the participation of children with DLD in studies about their peer relationships in school?

This project deployed mixed methods, which are outlined in Chapter 3. Additionally, the project design, research process, data collection tools, and analyses are described. In Chapter 3, I make specific considerations to participatory research approaches with children, reliability and validity, and ethics. As per my aforementioned comments, some results of this project are drafted as research articles; thus, the methodological details can be repeated in other parts of the thesis.

The first part of the project is a systematised literature review (Chapter 4), which mapped peer relationships studies involving children with DLD and analysed their findings in a narrative synthesis. The review identified 52 studies, which were based on interviews (n = 4), sociometric methods (n = 10), self-reports (n = 12), individual tasks (n = 4), naturalistic observations (n = 12), and staged observations (n = 10) of children with DLD. Despite the limited number of participatory studies with children with DLD, the review identified a few excellent examples of supporting children's participation in research, which can be built upon in future studies. Additionally, studies pointed at pragmatics and frequency of behaviours (prosocial and difficulties) as important contributors to the peer acceptance of children with DLD. This has implications for a finer targeting of language and behaviours in research and also in therapeutic settings.

The second part of this project, a series of case studies, comprised of primary data collection and direct engagement with 14 children with DLD and their classroom peers. Children with DLD were at the age of 6-8 years and attended Enhanced Provision (n = 3), a specific speech and language disorder class (n = 5) or a mainstream classroom (n = 6). Data was collected in the United Kingdom and the Republic of Ireland and consisted of parent and teacher reports, observations, sociometric measures, linguistic and nonverbal abilities assessment, and individual interviews with children with DLD and their peers. Child-centred and art-based approaches were adopted during one-to-one meetings with children to support children's needs and encourage their active participation. The results of the second part of the project are presented in Chapters 5-7.

Chapter 5 describes each participating child with DLD in rich detail. In each case, the prevalent social functioning themes are highlighted and discussed in a cross-case summary. Chapter 6 follows Selman's (1979) interpersonal understanding manual to analyse friendship formation data and learn about the friendship concepts of children with DLD. The results point at differences in social perspective taking within and across children, with those from mainstream settings displaying higher levels of social competence development. Chapter 7 complements the overall enquiry by focusing on the mainstream peers (n = 9) and their perceptions of children with DLD as friends. Peers did not report language and communication as barriers to their interactions with children with DLD. If facing communication breakdowns, peers showed an inclusive mindset by coming up with strategies to overcome the language difficulties of children with DLD.

The results of the overall project are brought together in a discussion referring to an existing conceptual model linking language and behaviours in children with DLD, participatory approaches to research with children with DLD, and educational, therapeutic, and research practice. This project confirms that children with DLD can actively participate in studies about their lives. It further expands our understanding of within-child characteristics promoting their peer relationships and highlights peers' inclusive mindset as one of the contributing factors to peer acceptance of children with DLD. This project concludes by appealing for more frequent participation of children with DLD and their peers in research studies to conduct more authentic investigations into children's lives. In addition, children's insights can inform educational practice and help create truly inclusive schools.

Chapter 1 Introduction

Chapter 1 introduces Developmental Language Disorder (DLD) from the developmental psychology and educational perspectives. First, I make a case for researching DLD due to its high prevalence among children and its impact on children's developmental outcomes, academic attainment, and employability. Next, I briefly position DLD within Speech, Language, and Communication Needs before moving on to promoting the role of education in supporting children holistically. Chapter 1 concludes by describing my professional experience, personal background, and values that have driven my interest in researching the peer relationships and wellbeing of children with DLD.

1.1 Children with DLD and their development

As an invisible disability, DLD affects approximately 2-3 children in a preschool class of thirty (Frazier Norbury et al., 2016; Tomblin et al., 1997). Compared to typically developing (TD) peers, children with DLD perform significantly lower on receptive and/or expressive language tasks without a known neurodevelopmental or auditory cause (Frazier Norbury et al., 2016; Tomblin et al., 1997). In a sample of 5- to 6-year-olds, 7.4% prevalence of DLD was found among monolingual English-speaking children with unaffected nonverbal abilities and living in the United States (US) (Tomblin et al., 1997). More recently, similar 7.6% occurrence of DLD was found in 4- to 5-year-olds in England (Frazier Norbury et al., 2016). This figure includes children with nonverbal IQ at average levels (4.8 per-cent) and below average levels (2.7 per-cent) (Frazier Norbury et al., 2016). Regardless of the criteria for nonverbal abilities, these statistics show high prevalence of children experiencing language difficulties.

DLD is part of a bigger family of Speech, Language, and Communication Needs (SLCN), experienced by three children in an average UK class of thirty (Frazier Norbury et al., 2016). To visualise the numbers, the Communication Trust presents infographics displayed in Figure 1.1.

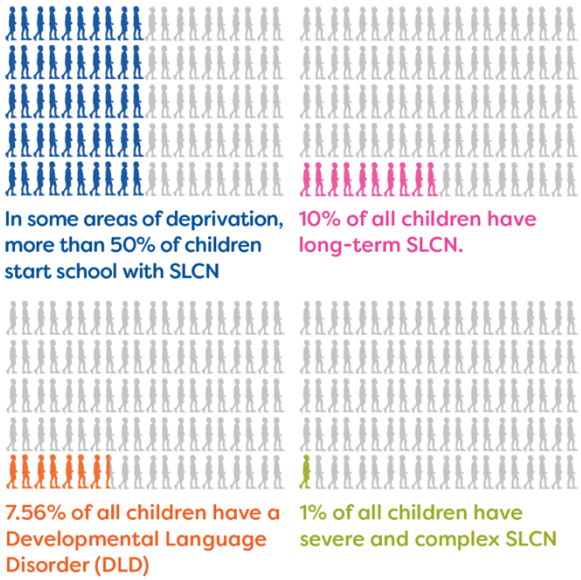


Figure 1.1 Prevalence of SLCN in UK (Communication Trust, 2017, p.4)

The above figure shows that many UK children struggle with acquiring language. They may experience difficulties with speech sounds production, stammering, voice, understanding language (e.g. making sense of words, sentences, instructions), using language, and interacting with others (e.g. understanding nonverbal communication) (Royal College of Speech and Language Therapists, RCSLT, 2017, p.1).

DLD specific terminology and diagnostic criteria will be explained in more detail in the next chapter. Here, I emphasise that the impact of DLD on children's lives is multifaceted and can be of great magnitude.

Through communication and interactions, language impairment fundamentally affects almost all areas of daily life experiences of children with DLD. In terms of social-emotional functioning, longitudinal studies show that children with DLD are at higher risk of social anxiety, emotional problems (e.g. Brownlie et al., 2016; St Clair et al., 2019; Törnqvist et al., 2009), and general mental health issues (Conti-Ramsden et al., 2013). They are more likely to experience behavioural difficulties (e.g. Conti-Ramsden & Botting, 2004; St Clair et al., 2011) and among young offenders, up to 60 per-cent have undetected language and communication issues (Bryan et al., 2015). Furthermore, multiple studies have confirmed children with DLD experience poorer peer relationships (Durkin & Conti-Ramsden, 2007; Fujiki et al., 1999a; Laws et al., 2012) and social and behavioural issues when interacting with their peers (Botting & Conti-Ramsden, 2000; Fujiki et al., 2001; Laws et al., 2012; Mok et al., 2014).

Indeed, peer relationships are the most developmentally vulnerable area of social functioning of children with DLD (Conti-Ramsden et al., 2013; St Clair et al., 2011). Longitudinal studies into life experiences and outcomes of children with DLD have confirmed that two thirds of children with DLD start facing peer problems from early childhood or early adolescence (Mok et al., 2014). This aligns with findings of St Clair et al.'s (2011) longitudinal assessment of behavioural, emotional, and social difficulties, which points to the prevalence of social problems throughout childhood to adolescence. However, the heterogeneity of children's emotional and linguistic profiles suggests that links between their language and social adjustment are not straightforward (Conti-Ramsden et al., 2018). Some children may be better equipped with self-regulation or self-efficacy to support their adjustment when facing emotional problems (Conti-Ramsden et al., 2018). In other children with DLD, receptive and/or expressive language difficulties may impede their social interactions. For example, they may not accurately decode peers' inferences or facial expressions, which can lead to feelings of frustration and worry (Conti-Ramsden et al., 2018). Such expositions remain open to other variables that may influence the peer relationships of children with DLD. Therefore, in addition to examining language, emotions, and behaviours, it may be useful to consult children directly to learn about their perceptions and experiences of peer relationships.

In addition, people with DLD are less likely to pursue higher education or find consistent employment and tend to work in elementary and low skilled occupations, for example in cleaning or delivery services (Conti-Ramsden & Durkin, 2012; Whitehouse et al., 2009). This trend has been backed up by Ruben's (2000) economic analysis, highlighting the urgency to support those with communication disorders because of changes in occupations that occurred in the past century. In Figure 1.2, light grey bars indicate manual jobs, and dark grey bars show communication-based jobs in the United States from 1900 to 2000.

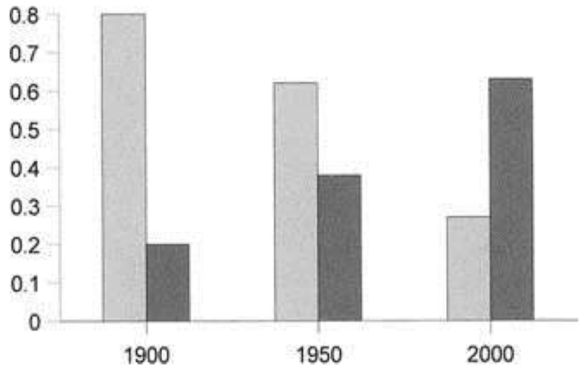


Figure 1.2 Change in occupations in the United States (Ruben, 2000, p. 241)

Ruben (2000) points out the increasing importance of communication skills in the job market. Although Ruben (2000) refers specifically to the US, globalisation has contributed to making communication one of the key 21st century skills worldwide. While language can be easily taken for granted, experiencing SLCN can cause wide-ranging and lasting damage to children's lives. As such, it is crucial that this population of children and topic are emphasised by researchers as well as educators.

1.2 Children with DLD in school

Speech, Language, and Communication needs (SLCN) comprise the largest category of Special Educational Needs (SEN) among primary-aged pupils in England (Department for Education, DfE, 2021). The latest school census reveals that 245,232 (24.5%) children who receive SEN support have SLCN (DfE, 2021). Additionally, 49,530 (16.3%) of children issued with an Education, Health and Care Plan have SLCN (DfE, 2021). The scale of the SLCN among children in the UK is captured in Figure 1.3.

Figure 1.3 Percentage of children in the UK with special education needs or disabilities (I CAN, 2016, p.6)

SLCN and dyslexia, which is also a language-related condition, are the most common SEN. Schools are guided to make the necessary arrangements to promote the learning and development of children with SLCN.

The approach to education as promoted in this thesis adopts the assumptions of the International Positive Education Network (IPEN). IPEN joins educators, parents, students,

companies, governments, and other education stakeholders to promote collaboration and enhance education practice and policies (2017, p.1). As shown in Figure 1.4, IPEN's idea of the double helix of education merges the fulfilment of academic potential with developing character strengths and wellbeing (IPEN, 2017).

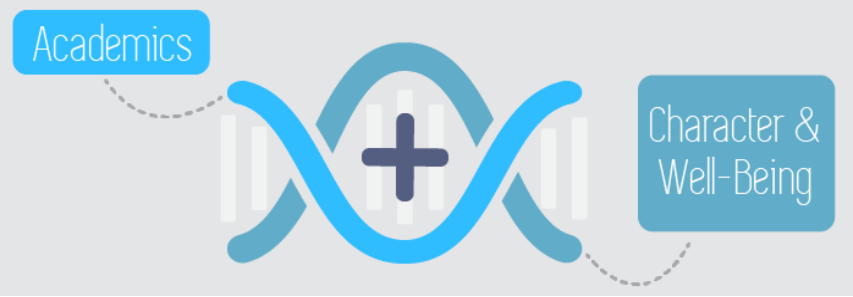


Figure 1.4 The double helix of education (IPEN, 2017, p.1)

By building life skills such as good relationships, engagement, and positive emotions, in addition to academic knowledge and abilities, education contributes to children's development in a holistic way (IPEN, 2017). As a result, this project proposes schools to be places for fostering children's communication, peer relationships, and wellbeing, or in other words feeling good and flourishing. In the case of children with DLD, school environments need to encourage inclusive communication and supportive interactions that would lead to positive learning, development, and self-actualisation.

This project proposes to research the peer relationships of children with DLD, how children with DLD make friends, and how their peer interactions contribute to their wellbeing. It hopes to learn directly from children about supportive characteristics that help children make friends despite having DLD. The findings will inform current practice and lay a base for a potential intervention aimed at improving peer relationships of children with DLD.

1.3 Background to the project

My interest in the peer relationships and wellbeing experiences of children with DLD has developed from my personal and professional experiences. I have witnessed first-hand the frustrations of children who struggle to express themselves verbally, compounded by the social and behavioural difficulties that often accompany atypical language development. I have been particularly concerned to note how these struggles have been met with mixed reactions by adults. In one example, the child of my close friend was perceived as being poorly behaved, aggressive, and lacking discipline by teachers. After psychological assessment for emotional difficulties, the child was diagnosed with DLD. This diagnosis

came as unexpected and unfamiliar news to both parents and teachers, suggesting that both schools and parents may not be sufficiently equipped to recognise and deal with DLD that may impair children's social-emotional functioning.

In addition, my professional experience has given me some insight into the unique challenges of being a student with special education needs (SEN) in educational environments. I am a trained guidance counsellor and a peer supporter in the Peer2Peer student group at the University of Cambridge, and I served for two years as the student Welfare Officer at Lucy Cavendish College. In these roles, I have worked closely with students with learning disabilities. I have been particularly concerned with SEN students' perceived wellbeing experiences in school and in finding scalable solutions to improve the quality of their lives.

I aspire to translate these experiences into this project. Though my insights into the impact of DLD abilities on children's lives come from an adult perspective, I have a keen interest in understanding the experience from the points of view of children from both the general population and those with a clinical diagnosis. I am particularly interested in how peer interactions may signal potential communication issues, given that communication represents one of the key channels for relating and forming bonds among peers. In this project, I aim to build on a study I conducted during my Master's on factors affecting children's wellbeing in school (Janik Blaskova & McLellan, 2017), this time focusing on children with DLD.

With the goal to improve the peer relationships and wellbeing experiences of children with DLD, my ideas behind this project are strongly rooted in my professional and personal aspirations, experiences, and values.

1.4 Main project aims

My doctoral research project explores the peer relationships and social functioning of children with DLD while actively involving these children and their friends in the research. Focusing on their friendships, I further investigate how children with DLD make friends and what factors promote their peer relationships. Peers are an essential source of their social support and perceived wellbeing in classrooms. I take an open approach to the investigation and do not limit the variables to language, behaviours, and/or social adjustment. Instead, I capitalise on participatory research approaches and direct engagement with children with DLD and their classroom peers. I aim to find variables that they consider as strong promoters to their peer relationships. Thus, the main aims of my project include:

- learning about the friendships and social functioning of children with DLD to identify what within-child factors contribute to their peer relationships;
- involving children with DLD and their classroom peers in research about their peer relationships.

The broad nature of the research project, topics, and participatory approaches required a complex investigation that I conducted through separate studies. In Table 1.1, I present an overview of chapters included in my dissertation and specify their objectives.

Table 1.1 Overview of chapters included in my thesis

	Chapter #	Line of enquiry	Objectives
	1	Making a case for researching DLD	Introduce DLD and its links to developmental outcomes Give an overview of the research project and its 2 main parts
	2	Key theoretical concepts of the project	Present an overview of the key concepts utilised in the research project
	3	Methodology and methods	Specify the project methodology and methods
RESULTS	4	Reviewing the link between language and peer relations in children with DLD	Systematically review literature on the peer relationships of children with DLD Map participatory approaches to studies with children with DLD
RESULTS	5	Case summaries	Describe the cases of participating children with DLD
RESULTS	6	Conceptions of friendships in children with DLD	Make a qualitative enquiry into the developmental levels of friendship concepts in children with DLD
RESULTS	7	Children with DLD as friends	Make a qualitative enquiry into peers' perceptions of children with DLD as friends
	8	Discussion and conclusions	Generally discuss all the results and make recommendations for practice (educational, speech & language therapy, research methods)

My research project has two parts. Part one, an analytical research synthesis (Chapter 4), is a critical review of the literature targeting the overarching themes of my project – peer relationships of children with DLD and participatory research involving children with DLD. Part two, a series of case studies, involves primary data collection that I analyse and report in three separate chapters (Chapters 5-7).

The complexity of both topics meant that the literature needed to be reviewed more systematically than traditional literature reviews typically included in doctoral dissertations. My systematised literature review (Chapter 4) maps the participatory methods used with children with DLD and complements the results from my primary data collection on the peer relationships of children with DLD. Thus, Chapter 4 supports my overall project findings. Nevertheless, I still include a basic overview of the key theoretical concepts of the project in Chapter 2.

Together, Chapters 4-7 are part of my Results section, and I refer to them as individual studies. Chapters 4, 6, and 7 are drafted as journal articles and are at various stages of publishing.

1.5 Summary of introduction

In Chapter 1, I made a case for researching the peer relationships and social functioning of children with DLD. I presented data on DLD prevalence among children, a brief DLD description and developmental outcomes linked with DLD. Furthermore, I included my professional and personal background that led me to research the topic of friendships and wellbeing of children with DLD. My project explores the peer relationships of children with DLD to learn about key factors promoting their friendships, which are vital to children's wellbeing. Participatory research with children with DLD and their classroom friends is promoted throughout the enquiry. In Chapter 2 that follows, I present key concepts underpinning my overall research project.

Chapter 2 Key concepts overview

Chapter 2 outlines the Developmental Language Disorder (DLD) diagnostic criteria and their implications for children's lives. First, I briefly overview the terminology and diagnostic categories of language disorders to introduce the puzzling issues in the area. Afterwards, I outline links between language, social, emotional, and behavioural difficulties through existing explanatory models. Next, I introduce the researched determinants of peer relationships of children with DLD, specifically, social competence and wellbeing. Finally, I briefly present policies and practice guidance promoting social inclusion of children with DLD in schools. DLD reflects in many aspects of children's experiences, which makes the theories behind the phenomenon rather complex.

2.1 Why can diagnosing DLD be a challenge?

Children's difficulties with developing language have been commonly approached from a medical perspective. In essence, children are referred for a formal assessment based on differences in behaviour and/or language in comparison to their peers. However, getting the correct diagnosis can be challenging due to DLD's complexity, lack of shared understanding of the criteria and its 'invisible' nature as a disability.

DLD is part of Speech, Language, and Communication needs (SLCN), an umbrella term covering various disorders that may occur due to biological predispositions, physical impairments, or social contexts. Bishop et al. (2017) summarise individual symptoms in Figure 2.1 below.

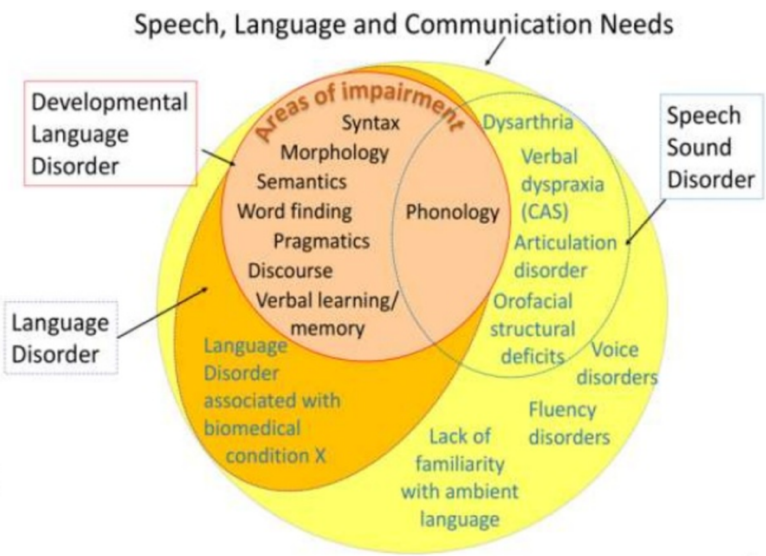


Figure 2.1 Indicators of language disorders (Bishop et al., 2017, p.1076)

As Figure 2.1 shows, indicators of different types of language disorders overlap. Depending on an individual child, symptoms may manifest with various intensities. This makes SLCN rather intricate and creates obstacles when establishing correct diagnosis.

Identifying DLD can also be difficult because children with linguistic difficulties can display similar social and communication characteristics to those with disruptive behaviour problems (Cohen et al., 1998). Unusual behaviours (e.g. outbursts, withdrawals) are easier to notice compared to impaired language, which may get overlooked. Additionally, diagnostic criteria of DLD often overlap with conditions such as autistic spectrum conditions, attention deficit hyperactivity disorder, dyslexia, and others (e.g. Jordan, 1993; Reilly et al., 2014). Therefore, it can be challenging to delineate the symptoms and establish the primary difficulty when diagnosing a child.

Additionally, scholars and practitioners use different terminology and diagnostic tools, and this creates even more confusion about DLD diagnosis. To illustrate, some examples used to describe language disorders include: 'Specific Language Deficit' by Stark and Tallal (1981), 'Mixed Receptive-Expressive Language Disorder' by the DSM-IV (APA, 1998), 'Language Disorder' and 'Social (Pragmatic) Communication Disorder' by the DSM-V (APA, 2013), 'Specific Language Disorder' (e.g. Reilly et al., 2014), 'Language Impairment' (e.g. Fujiki et al., 1999b), and 'Developmental Language Disorder' (DLD), (e.g. Korkmaz, 2011; Redmond, 2011). To clearly position my project, I will now explain the DLD definition and inclusive criteria that I adhere to in my doctoral research.

2.2 What is Developmental Language Disorder?

My research project targets children with DLD who fall behind the language and communication abilities of their peers. I adopted the DLD terminology for a number of reasons. First of all, the term DLD was endorsed by speech/language scholars and practitioners who participated in a multinational and multidisciplinary CATALISE consortium. The consortium congregated experts' opinions on using the DLD terminology and criteria (Bishop et al., 2017), including:

- persistent difficulties in acquiring and using language (e.g. spoken, signed, written);
- distinct difficulties in receptive and expressive language, which are below the levels expected for the individual's age;
- language difficulties occur in the absence of a pervasive developmental disorder;

- absence of neurological, sensory or physical impairments directly affecting language use (Bishop et al., 2016).

The agreed criteria resonate with Language Disorder as classified by the Diagnostic and Statistical Manual (DSM-5, APA, 2013). However, the label "Language Disorder" is not category-specific but also a part of diagnosis criteria for other conditions, including the adult-onset ones (e.g. acquired aphasia) (Bishop, 2020). Adhering to DLD therefore eliminated overlaps with other language-related diagnoses and specifies only one diagnostic category as agreed by the experts in the linguistic field. Furthermore, DLD explicitly considers multilingual/bilingual children, who are diagnosed with DLD only when experiencing language difficulties in their primary language (or languages) (Bishop et al., 2016). In DSM-5, this specification is rather hidden under the differential diagnosis section of "Language Disorder." Tackling possible confusion with other diagnoses, the term DLD endorses classification exactness. Moreover, DLD terminology has become more accepted and was even introduced in the latest International Classification of Diseases and Health Related Problems ICD-11 (World Health Organisation, 2021). DLD is a widely adopted term in the European, UK, and Australian contexts.

Another key reason for adopting DLD in my project is its inclusiveness regarding nonverbal abilities. As perhaps the most controversial decision, the CATALISE consortium moved away from specifying nonverbal abilities as a DLD criteria. This was justified with the below reasoning:

- regardless of nonverbal abilities, children with DLD have similar linguistic profiles;
- nonverbal abilities do not contribute to the effectiveness of linguistic abilities;
- nonverbal abilities are unreliable as they keep changing over time;
- many children with poor nonverbal abilities develop language abilities at levels appropriate to their age;
- diagnosing intellectual disabilities tends to be moving away from relying on nonverbal abilities, which are being replaced with adaptive functioning in everyday life using reasoning and judgments (Bishop et al., 2016, p.15).

This perspective, however, has not been shared across the world. Linguists considering nonverbal abilities as diagnostic criteria continue using the term Specific Language Impairment (SLI). SLI is referenced mostly in North America although SLI is not part of

DSM-5 as per the American Speech–Language–Hearing Association recommendation (ASHA, 2012; Reilly et al., 2014). SLI overlaps with many DLD criteria and maintains the principle of language difficulty occurring in the absence of other developmental disorders (ASHA, 2012). However, "a lack of consensus exists with respect to the two most fundamental aspects: what level of language ability constitutes an impairment and what level of nonverbal IQ is required to exclude a global learning disability?" (Reilly et al., 2014, p.418). SLI terminology is generally exclusion-based. It describes a very limited population of children, who do not fully represent the scale of children affected with developmental language difficulties (Reilly et al., 2014). As a result, children primarily affected by language difficulties may not receive adequate support (Reilly et al., 2014). Due to its inclusive nature, DLD therefore seems more representative of children experiencing significant difficulties in language development without having another known neurodevelopmental disorder or physical impairment. As a result of DLD, children's everyday lives, including their peer interactions and social functioning, are impacted. My project aims to explore these themes and builds on theoretical models linking language and social functioning in children with DLD.

2.3 Language and social-emotional development

Key theories of language acquisition contribute to the general understanding of DLD within the context of social and emotional development. Given my project themes of peer relationships and wellbeing, I will present relevant models referenced in studies about children with DLD.

2.3.1 Models of social and language abilities

Models explaining the relationships between language and social functioning suggest different causes for social, emotional, and behavioural difficulties of children with DLD:

- linguistic – Impairments in language structure, which is represented by phonology (speech sounds), grammar (morphology and syntax), semantics (vocabulary, meaning), and language use referred to as pragmatics (choice of language in social interactions) impede on the correct and appropriate way of communicating messages, which may result in misunderstandings (Reddy et al., 2004).
- social – Experiencing adverse reactions of others towards limited communication capacities leads to rejection and isolation (Bishop, 1997). As a result, children with

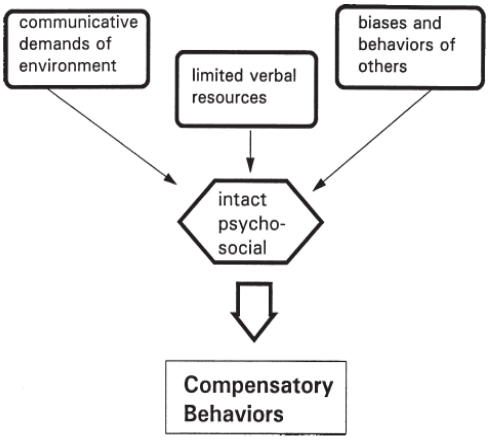
DLD develop maladaptive behaviours such as withdrawal or aggression (Bishop, 1997; Redmond & Rice, 1998).

- biological – An underlying condition that affects social cognition, which makes it difficult to communicate and interact with others. Impaired social cognition impacts on communication and social skills (Bishop, 1997; Redmond & Rice, 1998).

Drawing on the evidence that social-emotional difficulties often co-occur alongside language impairments in children with DLD (e.g. Botting & Conti-Ramsden, 2000; Curtis et al., 2018; Lindsay et al., 2007), I use the theoretical frameworks proposed by Redmond and Rice (1998) to frame my enquiry into the within-child characteristics important for peer relations of children with DLD. These models are relatively old. However, I use them here as a starting point given that they were one of the earliest attempts to provide a framework for exploring the reasons why children with DLD may present with co-occurring social and emotional difficulties. The models have had considerable influence on subsequent research.

Redmond and Rice (1998) presented two conceptual models (Figure 2.2) intended as competing explanations of the relationship between limited language abilities and socioemotional behaviours.

2.2a Social Adaptation Model



2.2b Social Deviance Model

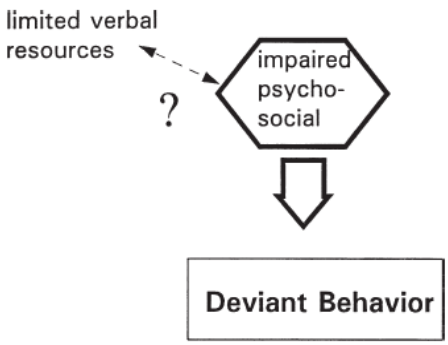


Figure 2.2 Social Adaptation and Social Deviance Models (Redmond & Rice, 1998, p.689-690)

The Social Adaptation Model (SAM, 2.2a) assumes that children with DLD[1] have no underlying psychosocial impairment. Through adapting their behaviours, children with DLD compensate for their limited language abilities when interacting with others in the environment, and this is the reason that problematic behaviours may be observed (Redmond & Rice, 1998). For example, a child with a limited vocabulary may not join in a conversation with her classmates not because she has low self-esteem but because she has not fully understood the topic under discussion.

The second framework, the Social Deviance Model (SDM, 2.2b), holds that socially problematic behaviour in children with language impairments results from a co-occurring underlying psychosocial impairment. According to Redmond and Rice (1998), the relationship between limited language is unclear as denoted by the interrupted arrow in Figure 2b. In this case, to contrast with the example above, failure to join a conversation could be due to underlying issues with self-esteem rather than due to limitations in vocabulary per se.

Table 2.1 below summarises the differences between the models as presented in the original seminal work of Redmond and Rice (1998).

Table 2.1 Summary of differences between the SAM and SDM

Underlying assumptions	Social Adaptation Model (SAM)	Social Deviance Model (SDM)
Determinants of socioemotional behaviours	Environment and social interactions	Socioemotional trait
Assessment across context & time	Different outcomes	Stable results
Aetiology, origins for the socioemotional behaviours	Co-occurring symptoms to be considered, cautious in linking language impairment and socioemotional differences	Genetics
Treatment	Interventions to increase verbal capacities in different contexts	Pharmacological / psychiatric interventions

[1] the original Redmond and Rice (1998) article used the term specific language impairment (SLI). Subsequent research and my project have adopted a more inclusive terminology of 'developmental language disorder' (DLD), which I use when discussing the models.

The comparison of the models is driven by their essential distinction – intact or impaired psychosocial attributes, which are not further specified in the Redmond and Rice (1998) paper. Inferences can be made about Redmond and Rice's (1998) view of psychosocial attributes by drawing on the Social Consequences Model, a precursor of the SAM, and tools (Child Behaviour Checklist and Teacher's Report Form) used in the confirmatory study of their models. Potentially relevant psychosocial attributes include self-esteem, motivation to participate in social interaction, and social competence covering emotional understanding, theory of mind, and social conflict solving, among others (Rice, 1993; Redmond & Rice, 1998). Intact psychosocial attributes in these domains support children in adapting their behaviour to their limited language, social context, and the expectations and behaviours of others but may be less effective when the demands of a given social context exceed a child's linguistic capacities (Redmond & Rice, 1998).

Thus, an important implication of SAM is that interventions aimed at supporting psychosocial adjustment in children with DLD need to focus on improving the child's verbal capacity first. The idea here is that improving language skills will address the imbalance between linguistic abilities and social needs, and thus enable children to interact with peers. The increased exposure to social encounters will in turn continue to enhance children's socioemotional competencies (Redmond & Rice, 1998).

On the contrary, according to Redmond and Rice, those adhering to views consistent with the SDM advocate that psychological or pharmaceutical interventions may be best as first-line treatments for co-occurring social, emotional, and behavioural problems in children with DLD. This is because the SDM postulates that the psychosocial attributes of children with DLD are fundamentally impaired, and if this is the case, interventions targeting linguistic abilities will make little difference (Redmond & Rice, 1998).

Redmond and Rice (1998) tested these models to a limited extent. They relied on parent and teacher reports of socioemotional and behavioural development of a very small sample of children with DLD (n = 17) and their age-matched peers (n = 20). Participating children were selected from a longitudinal study investigating morphosyntactic development (Rice & Wexler, 1996; Rice et al., 1995). Children with DLD were identified based on a very restrictive set of criteria. Their sample performed one or more standard deviations below the mean on receptive language and expressive language measures, and 14 of them were in receipt of speech and language intervention (Redmond & Rice, 1998). Furthermore, the identified children with DLD performed within the normal range in intellectual and hearing

assessments (Redmond & Rice, 1998). As I previously discussed, I adhere to a more inclusive DLD definition, which includes children with co-occurring conditions (e.g. ADHD, dyslexia) and lower nonverbal IQ.

At two time points, approximately one year apart, parents and teachers reported on children's socioemotional status by rating children's displayed behaviours. The results favoured the SAM model in the sense that children with DLD did not significantly differ from their peers on the teacher and parent ratings of psychosocial attributes (Redmond & Rice, 1998). This initial study implied that DLD is not necessarily linked to psychosocial impairments at clinical levels.

Although Redmond and Rice (1998) offer two explanatory models linking language and behaviour, I adopted the SAM in my project. Instead of the biological assumptions of SDM, I focused on the social aspects of SAM that resonate with the peer relationships and social functioning themes of my project.

2.4 Determinants of peer acceptance in children with DLD

Poor peer relationships are a particularly concerning developmental outcome in children with DLD (e.g. Forrest et al., 2020; St Clair et al., 2011) and offer context for exploring difficulties in children's social functioning. Especially in middle childhood (six to twelve years of age), when children start appreciating peers as more than momentary companions in play, children gain more independence and their peer interactions are less overseen by adults (Bukowski et al., 2018; Parker et al., 2015). Children's understanding of others' perspectives and feelings advances with maturation. They become better equipped for more complex interactions, including negotiations, conflicts, group identity, etc. (Bukowski et al., 2018; Parker et al., 2015). Therefore, peer relationships reflect levels of social and emotional development and are accordingly explored in research studies.

In comparison to typically developing (TD) children, the peer relationships of children diagnosed with psychiatric or psychological disorders have been researched less (Parker et al., 2015). Among clinical diagnoses, researchers tend to focus on behavioural (ADHD, conduct), pervasive developmental (autism, Asperger's syndrome), and emotional (anxiety, depression, eating disorders) difficulties (Parker et al., 2015). Nevertheless, a few scholars have assessed the peer relationships of children with DLD, assessing factors positively related to their friendships (e.g. Botting & Conti-Ramsden, 2000; Lloyd-Esenkaya et al., 2020; Toseeb et al., 2017). Whilst it is good to see some studies into the peer relationships of

children with DLD, these investigations leave some approaches unexplored (e.g. children's perspectives, peer perceptions, open enquiry).

First of all, scholars assess language and behaviours to a large extent. However, their findings leave gaps in whether peers consider language and behaviours as key within-child characteristics affecting their relationships with children with DLD. To illustrate this using an example of language, Laws et al. (2012) found that with increasing severity of language impairment, the popularity of children with DLD decreases. At the same time, language does not seem to predict peer rejection (Andres-Roqueta et al., 2016), which suggests that peers do not automatically avoid children with DLD but that those with more severe language difficulties tend to be less liked among their peers. Language-specific attributes may contribute to the peer acceptance of children with DLD in different ways. A longitudinal study revealed that receptive language predicted good peer relationships (Durkin & Conti-Ramsden, 2007). However, low pragmatics was strongly linked with poor relationships and expressive language to victimization (Durkin & Conti-Ramsden, 2007). This language-related evidence indicates that peers could perceive language as the key contributor to their relationships with children with DLD. Nevertheless, language data comes from batteries of tasks and sociometric measures, which give limited details about how peers actually perceive the language and its components in their interactions with children with DLD.

Similar inconsistencies have been found about the behaviours of children with DLD. Teacher reports and observation studies indicate that children with DLD experience social functioning difficulties when interacting with their peers (Botting & Conti-Ramsden, 2000; Fujiki et al., 2001). The same was confirmed by parent reports from the Manchester Language Study, which linked emotional and behavioural difficulties with the quality of peer relationships (Conti-Ramsden & Botting, 1999). However, these problems were not strong predictors of peer relationships (Durkin & Conti-Ramsden, 2007), and what is more, peers do not consider behaviours as important as language when reporting on peer acceptance (Laws et al., 2012). Therefore, approaching peers in an open enquiry would give a more rounded picture of what peers perceive as important characteristics of a child with DLD. Additionally, a qualitative enquiry would complement studies examining language and behaviours as pre-defined contributors to peer relationships of children with DLD.

The second limitation of studies investigating factors impacting the peer relations of children with DLD is their overreliance on adult proxies, whose reports often differ. In children with DLD, teachers report more behavioural difficulties than parents (Redmond & Rice, 1998) and

do not consider language as a single determinant of children's peer difficulties (Conti-Ramsden & Botting, 2004; Fujiki et al., 1999b). Instead, teachers indicate problematic behaviours as the key factor (Botting & Conti-Ramsden, 2000). At the same time, parent reports on children's language and vocabulary assessments at the age of 5 identified children at risk of DLD, who then had more peer problems at the age of 11 (St Clair et al., 2019). Differences between parent and teacher reports are observed in other fields too (e.g. Antrop et al., 2002; Crane et al., 2017). This points at the need to include the most relevant informants, depending on the purposes of a particular study. In the case of investigating peer relations, peers and children with DLD should therefore be consulted regularly.

The importance of data sources is further demonstrated in conflicting evidence of peer difficulties and social functioning of children with DLD. Parents reported no differences between children with DLD and their TD peers in terms of the number of friendships and the amount of time spent playing with their friends (Redmond & Rice, 1998). In contrast, multiple studies directly involving peers have subsequently confirmed poorer peer relationships of children (6-12 y/o) (Fujiki et al., 1999a; Laws et al., 2012) and adolescents (16 y/o) with DLD (Durkin & Conti-Ramsden, 2007; Mok et al., 2014). Still, 61% of adolescents with a history of DLD report having good friends (Durkin & Conti-Ramsden, 2007), proposing the importance of children with DLD as informants about their peer relationships and social functioning.

Assessing the social-emotional functioning of children with DLD based on adult proxy reports seems to consider only how adults interpret children's behaviours. According to Bakopoulou and Dockrell (2016), while teacher ratings cover complex aspects of behaviour and communication, they do not indicate a single factor that could explain children's social-emotional functioning. This can mean that there many factors impacting social-emotional functioning. Disparity of peer relationship determinants was confirmed in a systematic review of peer interaction studies drawing on teacher, parent, and researcher observations (Lloyd-Esenkaya et al., 2020). By over-relying on adult ratings of children's external behaviours, there is a risk of missing an important perspective from children themselves and the qualitative information from their TD peers. The existing quantitative measures of sociometrics (peer nomination, roster-and-rating) (Westby & Blalock, 2005) fail to provide insight into specific social and communication behaviours that peers like or dislike. Scholars call for a qualitative and holistic enquiry into the peer relationships of children with DLD, which would revert to determinants that are more meaningful to their interactions with peers

(Andres-Roqueta et al., 2016; Lloyd-Esenkaya et al., 2020). Consequently, this research project seeks to fill in the gap by involving children with DLD and their peers to learn how children interact and identify within-child characteristics shaping their peer relationships.

In summary, studies have not provided conclusive results of what is the most significant determinant of peer relationships of children with DLD. By predominantly targeting language and behaviours, other important factors may have been overlooked. Scholars keep extensively involving parents and teachers, whose reports are often contradictory. Moreover, children with DLD and their peers show different views to adults. These contradictions highlight the need for more direct investigations with children and the use of multiple perspectives to collect data about their peer relations.

Exploring the perspectives of children with DLD and their peers will enhance our understanding of their peer relationships. It will shed light on the within-child factors that they consider as key contributors to their peer relationships. Children are the experts of their lives, and giving them a voice in an open enquiry will expand our investigations of their peer relationships beyond adult perspectives.

2.4.1 Underpinnings of social competence in children with DLD

In addition to language and behaviours, scholars have considered social competence as a contributor to the peer relationships of children with DLD. The terms social cognition and social competence have been used to cover a broad range of mental processes (e.g. recognising emotions and mental states of others) that can manifest in the behaviours of children with DLD (Botting & Conti-Ramsden, 2008). As such, social cognition merges the ability to identify or label the emotions of others while attending to contextual circumstances with the use of effective interaction strategies (Bakopoulou & Dockrell, 2016). Social cognition is commonly assessed through theory of mind, facial recognition, or false belief tasks, which are deemed to indicate the social competence of children with DLD (e.g. Andres-Roqueta et al., 2016; Farmer, 2000).

Studies targeting children with DLD have found that social competence could be considered as an independent contributor to peer relationships (Andres-Roqueta et al., 2016) and the strongest predictor of their social functioning outcomes in adolescence (Botting & Conti-Ramsden, 2008). In support, poor social competence has been linked with both poor peer relationships and behavioural difficulties (Conti-Ramsden & Botting, 2004; Westby & Blalock, 2005). In peer interactions, poor social competence manifests as difficulty resolving

conflicts or understanding peer's emotions and intentions, as reported by parents and school practitioners of children with DLD (Lloyd-Esenkaya et al., 2021). As a result, my project considered social competence as a distinct variable in the investigation of determinants of peer relationships of children with DLD.

Studies about children with DLD have assessed social competence using more traditional tools combining theory of mind and emotion knowledge measures. DLD researchers have combined tasks such as unexpected content, change of location, emotion labelling, identifying emotions, and others in different batteries of tasks (e.g. Andres-Roqueta et al., 2016; Bakopoulou & Dockrell, 2016). Although these tools aim at eliciting the developmental level of understanding others, their tasks and scenarios do not map particularly well to what people do and may be detached from children's own experiences of peer relationships. Selman (1980) offers an alternative way to examine social competence in children using their own experiences and perceptions of friendships. I will now present Selman's model of social understanding in more detail.

2.4.2 Selman's *Friendship formation* development

Subscribing to a structural-developmental tradition, Selman (1980) proposes a complex social understanding model based on perspective-taking maturity. The stages of understanding the self and others map with relationship development (Selman, 1980). Selman's model is theoretically rooted in Piaget's (1926, 1932) work on egocentrism. Piaget (1926, 1932) proposes that social and cognitive development lies in children's ability to overcome egocentric tendencies, become aware and consider the views of others. By understanding the social reciprocity in their interactions, children reach the highest developmental stage of their social understanding (Selman, 1980). Alternative, and possibly more cited, models of Bigelow et al. (1996) and Hartup (1996) share similar understandings of friends with Selman to some extent (e.g. close proximity, shared preferences). Bigelow et al. (1996), however, subscribe to behavioural perspectives and describe relationship development in light of social rules and reasons behind applying certain rules within different relationships, including friendships. Hartup (1996) differentiates between deep (reciprocity) and surface (social interaction) structures, mapped in three dimensions: having friends, identity of a friend and friendship quality. While the later models of Bigelow et al. (1996) and Hartup (1996) offer important aspects of social-cognitive development within friendships, Selman's model

presents the best-articulated framework of children's social-cognitive development within the friendship context (Parker et al., 2015).

Selman's model of social perspective-taking includes two components: A structural or relating-coordinating component that defines differentiating and relating perspectives, and a conceptual component describing intensive qualities of persons or selves (Selman, 1980, p. 40). Both components need to be considered to preserve the model's social-developmental quality and avoid reducing the model to either a cognitive skill or its application to social context (Selman, 1980, p. 40).

Drawing on his and his colleagues' studies with children (Selman, 1971; Selman et al., 1977), Selman (1980) created a map of interpersonal understanding, which outlines social-cognitive development across four domains: Individual, Friendship, Peer Group and Parent-child Relations. In each domain, Selman (1979) recognises five developmental stages that can be observed across specific *issues*. In Friendship, these *issues* include *Friendship formation*, *Closeness and Intimacy*, *Trust*, *Jealousy*, *Conflicts*, and *Termination* (Selman 1979, 1980).

Selman's (1980) model considers variations of developmental stages reached across these *issues*. This means that, for example, within Friendship, a child can be jealous when their friend prefers playing with another peer (Stage 2, *Jealousy*) yet appreciate their best friend for their physical skills, e.g. fast running (Stage 0, *Friendship formation*). Friendship concepts broken down to this scale support our understanding of the fundamental ideas that children hold about their friendships with peers and can support designing interventions targeting children's social-cognitive understanding in very specific peer relationship situations.

In Table 2.2, I outline the developmental stages of social understanding within the *issue* of *Friendship formation*.

Table 2.2 ***Friendship formation*** **in Selman's (1980) social understanding model**

Stages	Age	Friendship formation	Friendship understanding	Social understanding, perspective taking development
Stage 0	3-7 years	Close friendship as momentary physical interaction	Physical proximity key to friendship formation	Egocentric, undifferentiated
Stage 1	4-9 years	Close friendship as one-way assistance, friends as a means to achieve one's goals	Shared interests, need to know likes/dislikes	Subjective, differentiated perspectives Awareness of motives, thoughts, feelings, directing actions
Stage 2	6-12 years	Close friendship as fair-weather cooperation	Match context-specific likes/dislikes, not matching only to the fixed standards of one's likes/dislikes	Reciprocal perspectives Able to put self in other's shoes, reciprocity of thoughts & feelings, rather than actions
Stage 3	9-15 years	Close friendship as intimate and mutual sharing	Orientation to the relationship itself, not individuals	'Third person' or mutual perspective Able to step outside of a relationship, coordinate the interests of each party in the interaction
Stage 4	12 to adulthood	Close friendship as autonomous interdependence	Different kind of friendships meet different needs	Societal or in-depth perspectives Complex understanding of others' perspectives that exist simultaneously and at multidimensional levels, e.g. people can share perspectives on superficial information, common interests or at the level of deeper, unverbalised feelings

Making friends, or forming friendships, is the first step in building peer relationships. The concepts that children with DLD hold about making friends may hinder or promote their efforts to approach and connect with peers. Therefore, I considered *Friendship formation* concepts as part of the investigation of the peer relationships of children with DLD. Selman's model examines children's social competence within the context of *Friendship formation*, which I outline in detail in Table 3.6. *Friendship formation* is further specified in terms of motives (why), mechanisms (how friendships are made), and descriptions of a best friend.

Selman's (1980) model was validated in three studies, confirming the distinct developmental stages at the ages of 4, 6, 8, 10, 13, 16 and 22-30 years (Byrne, 1973; Selman & Byrne, 1974; Selman, 1980). Despite limited samples (low sample sizes, male only) of the validation studies, scholars have adopted Selman's model in their studies on children's friendships (e.g. Hayes et al., 1980; Schofield & Kafer, 1985). Although the model was developed almost fifty years ago, a more recent study confirmed Selman's developmental stages, endorsing its persistent validity (Marcone et al., 2015).

The model was developed with TD children. Using the model with children with various developmental difficulties confirmed their lower developmental stages and higher fluctuation across *issues* compared to TD children (Selman et al., 1977; Kravetz et al., 1999). These findings imply that assessing the social understanding of children with DLD in the context of friendship formation has the potential to expose aspects of their social competence development contributing to their peer relationships. Selman's (1980) model of social perspective-taking is particularly relevant to the current project as it captures the detail of establishing friendships, builds on children's qualitative assessment of friendship understanding, and provides a systematic and adaptable measure to assess children's *Friendship formation* concepts.

2.5 Wellbeing as a peer relationship factor

Having friends and feeling supported socially are among the key factors enhancing perceived wellbeing (Deci & Ryan, 2004). As a means of cognitive and affective appreciation of one's life (Diener et al., 2009), wellbeing critically influences the social functioning of children with DLD. DLD, however, can limit children's ability to connect with others, which may contribute to internalising psychiatric symptoms (Durkin & Conti-Ramsden, 2010). Compared to peers, children with DLD have lower quality of life (Eadie et al., 2018; Nicola & Watter, 2015). It is therefore quite surprising that only a few studies have specifically

explored the wellbeing of children with DLD (e.g. Lyons & Roulstone, 2018; Roulstone & Lindsay, 2012), which is now considered an emerging research area of this population (Lyons & Roulstone, 2018).

Studies with children with DLD tend to examine children's social and emotional difficulties as comorbidities of their language symptoms (e.g. Charman et al., 2015; Fujiki et al., 2004; Levickis et al., 2018) or longitudinally assess developmental outcomes in terms of their mental health (e.g. Beitchman et al., 2001; Conti-Ramsden et al., 2013) and the reported quality of life in adulthood (e.g. Arkkila et al., 2008; Records et al., 1992). Research projects focus mostly on specific psychosocial difficulties of children with DLD, such as victimization (Conti-Ramsden & Botting, 2004; Redmond, 2011), low self-esteem (Jerome et al., 2002), or withdrawn behaviours (Fujiki et al., 1999b; Maggio et al., 2014). Pioneering a more strength-based approach to the wellbeing of children with DLD, Toseeb et al. (2020) found that play and prosocial behaviours in children with DLD were connected with fewer behavioural difficulties in middle childhood. Similarly, increased emotional competence lowered social anxiety and somatic complaints in children with DLD (Samson et al., 2020). Positive characteristics and behaviours, however, have been rather neglected in research targeting children with DLD (Conti-Ramsden & Durkin, 2016). As a result, general wellbeing studies are needed to balance findings about the social and emotional functioning of this population.

The profile of children with DLD suggests that their need for social interactions is not affected at clinical levels (Durkin & Conti-Ramsden, 2010) and so peer relationships remain crucial to children's wellbeing. In just over half of children with DLD, cooccurring emotional and peer difficulties have parallel developmental trajectories between the ages of 7 to 16 years (Conti-Ramsden et al., 2018). Additionally, children themselves confirm the importance of peer relationships to their wellbeing experiences. In a narrative enquiry, 9- to 12-year-old children with DLD revealed that peers make them feel validated and protected against bullies, promoting children's wellbeing (Lyons & Roulstone, 2018). Despite the limited data triangulation, this study points at peer relationships as a key theme in both positive and adverse wellbeing experiences of children with DLD. More importantly, Lyons and Roulstone (2018) provide children's insights directly, without drawing on parent or teacher reports. As a result, children with DLD can actively participate in research studies and reveal their perceived wellbeing and peer relationship experiences in school.

2.6 Social inclusion of children with DLD in schools

Children's friendships and wellbeing are closely linked to their social inclusion in school. As part of inclusive education, social inclusion, a term often used interchangeably with social participation, involves peer relationships/friendships, peer interactions, peer acceptance of a child with special education needs (SEN), and how a child with SEN perceives being accepted by peers (Koster et al., 2009; Bossaert et al., 2013). Although social inclusion impacts children's peer relationships almost immediately, it is debatable to what extent current inclusive education policies target the social inclusion of children with DLD.

In the UK, inclusive education policies draw on the United Nations Convention of the Rights of Persons with Disabilities (2006) and "commit to progressive removal of barriers to learning and participation in mainstream education" (Department for Education, 2015, p.25). Under this policy, children with DLD form part of the bigger Speech, Language, and Communication Needs (SLCN) group, receiving speech and language therapy to improve linguistic abilities, academic outcomes, and peer interactions (Department for Education, 2015). Inclusive policies, however, do not entail the entire process of inclusive education, which relies hugely on inclusive practice - what people do (Florian & Black-Hawkins, 2011). To enhance children's experiences of inclusion at the classroom level, we need to understand how inclusive policies are being implemented in practice.

It is encouraging to see that for children and young people (0-19) with SLCN, the UK government initiated an independent review of inclusive education practice, published as the Bercow Report (2008). In collaboration with the Royal College of Speech and Language Therapists (RCSLT), the report provided recommendations that were revisited in Bercow: Ten Years On (2018). Both reports demonstrate the dedication of the government, RCSLT and other partners (e.g. I CAN charity, parents, educators, National Health Service) to continue updating policies, monitoring their implementation and ultimately improving the social inclusion of children with SLCN. The more targeted recommendations and good practice examples in Bercow: Ten Years On (2018) show that the discourse is moving more towards inclusive practice for children with DLD. Nevertheless, the strong focus on services supporting language in classrooms remains, with social inclusion generally staying behind as a side-effect. This could be partially explained by the nature of the document – a policy review.

To promote social inclusion, teachers may benefit from a very recent guide on supporting children with DLD in mainstream schools published by I CAN, the children's communication charity (2021). The guidebook outlines concrete strategies promoting peer relationships and interactions and informs about DLD, its identification, and communication-supporting approaches (I CAN, 2021). It seems that encouraging social inclusion in classrooms is a rather bottom-up effort informing inclusive education policies. Consequently, this research project will support these bottom-up endeavours by learning about peer relationships directly from children with DLD and their classroom peers.

2.7 Goals of the research project

To summarise, DLD seems to be dynamically interrelated to children's behaviours, emotional development, and social skills. Scholars have assessed these abilities and even targeted peer relationships of children with DLD during middle childhood. However, the results from most studies are mixed and inconclusive of the determinants influencing whether children are accepted or rejected by their peers. Moreover, the perceptions of adult and child informants differ; teachers consider behaviours crucial while the peers consider language more important when making friends.

This project aimed to contribute to the current knowledge of peer relationships and research involving children with DLD in several ways. First, it adopted a child-oriented perspective when examining the importance of language, behaviour, and psychosocial attributes for the peer relationships of children with DLD. After systematically analysing existing literature of peer relationship research directly involving children with DLD, the project moved to analysing the primary data. A qualitative enquiry involving children with DLD and their classroom peers provided an in-depth understanding of the peer relationships and social functioning of children with DLD. Finally, the project considered children's wellbeing as a factor contributing to the peer relationships of children with DLD. Answering the over-arching research questions below assisted in achieving the project aims:

1. What are the within-child characteristics that promote the peer relationships of children with DLD?
2. What research methods facilitate the participation of children with DLD in studies about their peer relationships in school?

The aspects of the overarching goals – within-child characteristics, peer relationships, DLD profile, and participatory research with children – are rather complex; therefore, the investigation was split into more manageable studies, each producing meaningful results.

The studies were linked in a number of ways:

1. All studies focused on the peer relationships of children with DLD and aim to learn how their peer relationships can be improved in school.
2. The studies were underpinned by the Redmond and Rice (1998) social adaptation model explaining links between language and behaviours in children with DLD.
3. The studies promoted children's voices via a participatory approach to research and child-centred interactions during data collection.

While the individual studies shared the same aforementioned themes, they contributed distinctively to the project and built on each other when achieving the overarching project goals. Individual contributions and connections among studies will be presented next.

2.8 Overview of studies in the research project

The systematised literature review (Chapter 4) examined existing studies involving children as informants to investigate the links between language abilities and peer relationships of children with DLD. It mapped the within-child factors that scholars had considered and identified as crucial for children's peer relationships. Additionally, the study reviewed participatory research methods applied with children with DLD.

The case studies (Chapter 5) followed a participatory approach to research with children with DLD and considered within-child characteristics influencing their peer relationships in class. Adopting a child-centred approach, this study aimed to understand how the unique within-child attributes manifest in the social interactions of participating children.

The next study (Chapter 6) examined how participating children with DLD understand others. This qualitative study directly engaged children with DLD to enquire how they perceive their peers and what they think of their peer interactions. The goal was to learn about the friendship concepts of children with DLD and also their strategies to make friends.

The final study (Chapter 7) focused on inclusive education and explored the perspectives of mainstream classroom friends of children with DLD. It asked about friends' experiences

interacting with children with DLD and elicited recommendations that friends would give to children with DLD to make friends.

The strategies and methods used in the above studies will be described in the next chapter.

Chapter 3 Methodology

This chapter outlines methodology and methods followed in this doctoral research project. Starting with the overall research design and structure, I describe the philosophical assumptions that I adopted in the project. Next, I briefly add details about part one of the project, a systematised literature review, which is fully elaborated in Chapter 4. I then move on to part two that involves primary data. I describe the participating children with DLD and specify data collection procedure, methods, and analyses. Finally, I consider the project's reliability, validity, and ethical implications before moving to the Results, which are detailed in the next chapters.

3.1 Research design

The main objectives of this doctoral project were to research the within-child characteristics of children with DLD that help them fit in and make friends in a classroom, and to promote participatory research with children with DLD. To achieve these objectives, the project went beyond adopting a traditional qualitative and quantitative dichotomy, and deployed both research approaches. For such an integrated methodology, Plowright (2011) recommends adopting a mixed methods approach. Within social and behavioural sciences, mixed methods have been described in depth by Teddlie and Tashakkori (2009, p.4), who recognise this approach as the 'third research community.' Mixed methods combine qualitative and quantitative data in collection, analyses and interpretation stages of a single study or series of studies investigating the same phenomenon (Leech & Onwuegbuzie, 2009; Tashakkori & Teddlie, 2003), thus giving "a more complete understanding of a research problem than either approach alone" (Creswell, 2014, p.32). Since peer relationships and characteristics of children with DLD require a thorough investigation, the mixed methods approach provided a more comprehensive understanding of this problem domain than qualitative or qualitative approaches alone.

I followed the convergent parallel design (Figure 3.1), which generally gives equal weight to quantitative and qualitative aspects of the project (Creswell & Plano Clark, 2011).

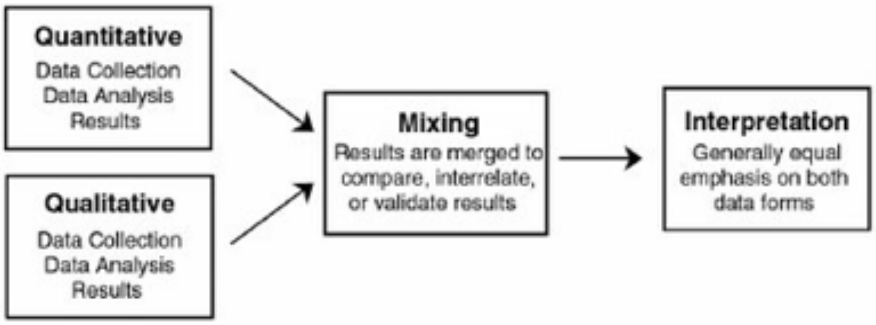


Figure 3.1 Convergent parallel design (Creswell & Plano Clark, 2011, p.69)

Each method attends to the research questions in a complementary way and that helps build a more comprehensive understanding of the phenomena (Creswell & Plano Clark, 2011) - the within-child characteristics contributing to the peer relationships of children with DLD and research methods promoting participation of children with DLD in studies about their peer relationships.

3.1.1 Structure of the research project

Mixed methods were applied in the overall design of my doctoral research project, which addresses the research questions in two parts. The first part, a systematised literature review, examines previously conducted qualitative, quantitative, and mixed empirical studies that involve children with DLD when researching children's peer relationships. The second part of the project involves primary data collection and a series of case studies. Data collection methods were piloted and adjusted to support children's participation. The second part resulted in three separate studies. Figure 3.2 outlines the overall project, its parts, and studies that were conducted.

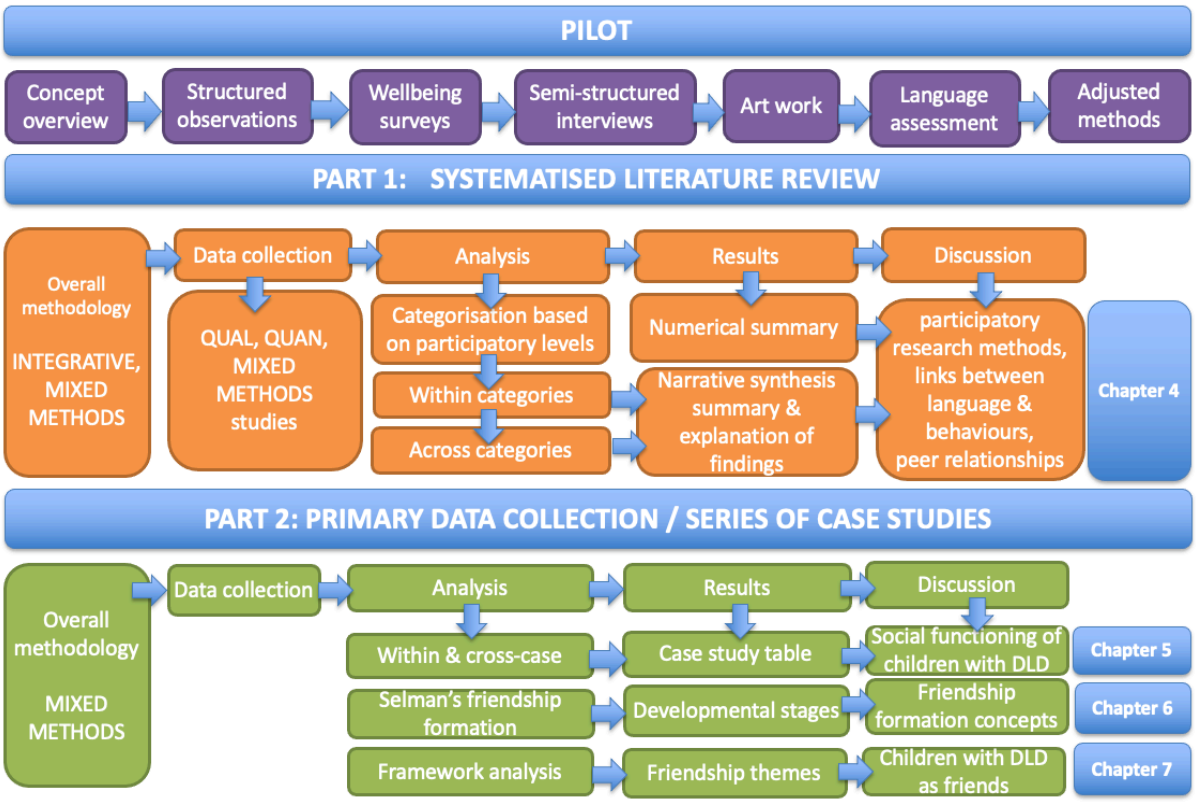


Figure 3.2 Overall doctoral research project design

Prior to collecting data for the research project, I conducted a pilot study to experience interacting with children with DLD in one-to-one meetings, assess the suitability of initially considered qualitative tools, establish the feasibility of the quantitative measures, and estimate the duration of the selected assessments. As a result of the pilot, I made alterations to the originally planned data collection methods and moved from surveys to interviews. I introduced art-based tools (e.g. illustrations, drawings) and a flexible approach to changing the order of the assessment according to children's preferences. Building on my piloting experience, I adopted a child-centred approach to encourage data collection with children in the second part of the project.

The first part of the project, a systematised literature review, adopted integrative, mixed methods approaches and a narrative synthesis. I identified studies using the "PICo" Framework, which is a qualitative alternative of the widely known intervention-focused PICO (Stern et al., 2014). The PICo Framework is fully elaborated in Chapter 4. Additionally, I specify mixed methods review in section 3.2 Systematised literature review.

The second part of my project draws on primary data collection designed as a series of case studies design. The results of the second part of my project are presented in three separate chapters. Chapter 6 and Chapter 7 are drafted as research articles and include some methodological information. Therefore, in this chapter, I will elaborate on the studies' overall approaches, methods, and analyses, that Chapter 6 and Chapter 7 do not capture in detail.

3.1.2 Philosophical underpinnings of the research project

Mixed methods offered an alternative to strictly following one philosophy throughout my doctoral research project. This paradigm shift, from the well-established traditions of positivism in quantitative (Tashakkori & Teddlie, 2010) and constructivism in qualitative (Lincoln & Guba, 1985) towards pragmatism, addresses the research questions more practically (Creswell, 2014). As a balanced or pluralist approach, pragmatism applies a 'what works' approach, which gave me flexibility in mixing methods and creatively designing studies answering broader and more complex research questions (Johnson et al., 2007; Tashakkori & Teddlie, 2010). I combined research methods, analyses, and interpretation tools in a compatible and appropriate way so that such a 'fusion of approaches' or the 'third alternative' paradigm best served my research purposes (Denscombe, 2008, p.273; Johnson et al., 2007, p.112). As the 'third research community' (Teddlie & Tashakkori, 2009, p.4), mixed methods are based on specific assumptions of epistemology, axiology, and ontology.

A mixed methods epistemology considers both objective and subjective understandings when researching a phenomenon (Tashakkori & Teddlie, 2010). Regarding axiology, values are important in mixed methods and researcher's personal interests tend to drive the selection of study topics, variables, or units of analysis (Tashakkori & Teddlie, 2010). In my case, I emphasised the peer relationships and the voice of children with DLD. Ontological assumptions of mixed methods consider the nature of reality to align with the positivist and postpositivist understanding of external, independent reality while remaining pluralistic in the explanation of the truth, which in pragmatic understanding cannot be fully determined (Cherryholmes, 1992). As a result, pragmatism considers "diverse viewpoints regarding social realities" and follows "best explanations within personal value systems" (Tashakkori & Teddlie, 2010, p.88). This ontology of mixed methods has been criticised and pragmatism as a paradigm needs to distinguish more clearly whether reality is one, accessible via multiple methods or social reality is multiple, thus accessible only via mixed methods (Johnson et al., 2007). In this project, I consider peer relationships as part of a multiple social reality.

Therefore, I looked for different data sources – children with DLD, peers, parents/carers, teachers, and me as the researcher.

Dewey's (1929) transactional approach to knowledge offers another explanation of the philosophy behind pragmatism. Dewey (1929) holds that our access to reality is limited and we can know the truth to the extent of our reciprocal interactions with the world. We can only gain information from possible consequences of our actions and interactions with the world; thus, the world independent from our lives can hardly provide us with the truth (Biesta, 2010). The temptation to fall into subjectivism is prevented by the importance of interaction with the world and by the construction of an intersubjective world (Biesta, 2010). Dewey (1929) suggests that by collaborating, we transform and coordinate our subjective world to create an intersubjective world. My understanding of knowledge as plural, changing and open, supported following the pragmatic paradigm in mixed methods (Biesta, 2010).

The philosophical assumptions of mixed methods and pragmatic paradigm match with my research goals. The strategy to integrate quantitative and qualitative approaches facilitated consolidating different perspectives in an intersubjective understanding of the peer relationships of children with DLD. A range of data sources, collection methods, and analyses deployed throughout the project aligned with the integrated framework of mixed methods. Some of the risks linked with the challenges of this approach were mitigated by piloting. I overcame obstacles that arose during the project by consulting my supervisor and research group of students, who similarly target a clinical group of children experiencing communication-related difficulties. I found this research network and shared knowledge particularly useful in data analyses and integration stages. Following mixed methods underpinned by the pragmatic paradigm supported a compatible use of qualitative and quantitative approaches, which were selected to fit with the research questions at each stage of the research enquiry. Pragmatism further assisted with the participatory aspect of the project. This approach represented a unique characteristic of the design, which has not yet been fully applied in studies targeting children with DLD.

3.1.3 Children's voice as a core value of the project

Actively promoting children's voice in the studies was an essential aspect and one of the project goals aligning with my core values as a researcher. The need to encourage children to be involved in matters that influence their lives has been promoted by policy documents including the United Nations' Convention of the Rights of the Child 1989 or the Children Act

1989 in the United Kingdom (UK). The core standards of the UK's Department of Health (2004) state that their provisions consider the views of the recipients of health services. Moreover, researchers have started to consult children and develop methods matching the perceived level of children's development and capacities. Although children and young people with disabilities have participated in education and health studies (e.g. Lewis et al., 2007), those with Speech, Language, and Communication Needs have been involved scarcely.

Before outlining the specifics of conducting studies with children with DLD, I will briefly describe the model of participatory research with children that I adopted in this research project. I follow the Ladder of Participation (Figure 3.3) by Hart (1992), who gives insights on the levels of participants' involvement in projects.

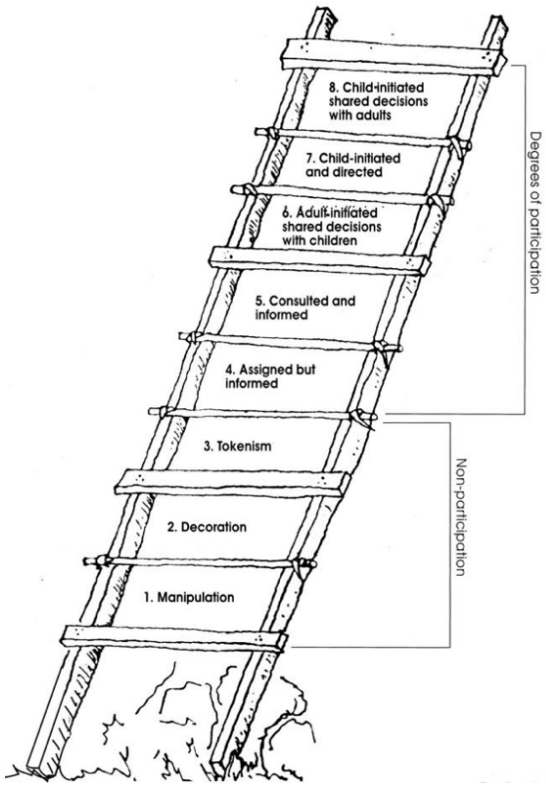


Figure 3.3 The Ladder of Participation (Hart, 1992, p.8)

The ladder metaphor splits children's participation into 'rungs', each describing the levels of the information provided to them, their voluntary and informed participation, and their ability to influence decisions during or as a result of the project (Hart, 1992). At the lowest level, Manipulation, children are not informed about the reasons for their participation in a project and are not aware of the meaning of their actions (Hart, 1992). At the top rung, children are

the initiators of the activity and share decision-making with adults (Hart, 1992). Despite, following up children's initiatives or sharing decision-making with them may not be always possible. Hart (1992) emphasises the need to approach children as equal partners, particularly in matters that directly influence their lives. With genuine interest in children's perspectives and using approaches reflecting their maturity and abilities, any barriers in adult-child relationships or communication can be removed (Hart, 1992). The verbal interaction element is particularly relevant to studies with children with DLD.

The extent to which children with DLD can actively participate is often limited by their expressive and receptive language challenges. Nevertheless, researchers have interviewed young people with a history of DLD about their educational experiences (e.g. Palikara et al., 2009). With the use of visual prompts, Lyons and Roulstone (2018) have interviewed children with DLD between nine and twelve years of age and explored their daily life experiences. However, important developments in children's social lives and competencies happen before they are nine-years-old. Therefore, this project engaged with younger children about their interactions and relationships with peers in school, in order to better understand how these can be improved. Building on the research and practice of working with children with DLD, I aimed to ensure that children with DLD can actively voice their perspectives in spite of their communication difficulties. I adopted a child-centred approach when meeting children, and will elaborate on the specific methods and procedures in section 3.3.2 Interacting with children with DLD in one-to-one meetings. Children's voice was a core value throughout the project, and drove both parts - the systematised literature review and case studies. Next, I will describe the application of mixed methods to the systematised literature review, which reviewed studies directly involving children with DLD.

3.2 Systematised literature review

Systematised literature review represents part one of my research project. In alignment with the overall research approach, I followed mixed methods and conducted an integrative review (Whittmore, 2005), also known as the mixed methods review (Grant & Booth, 2009). Mostly used in medical field, an integrative review benefits from analysing evidence-based studies that follow qualitative and quantitative or mixed methods approaches (Evans, 2007). Combining evidence from a variety of methods, an integrative review supported the goal of promoting participatory studies with children with DLD. It mapped different methods that have been used when eliciting information about peer relationships of children with DLD.

Additionally, mixed methods reviewing helped generate a more holistic picture about the within-child factors contributing to the peer relationships of children with DLD.

The integrative review sought to answer the below research questions:

1. To what extent have existing studies used participatory methods when researching the peer relations and friendships of children with DLD?
2. What examples of good practice in participatory research can be found in the research literature on DLD and peer relations?
3. What do the findings from studies directly including children with DLD highlight as important when considering links between language and peer relations?

The review followed five stages (Cooper, 1982, 1984) outlined in Figure 3.4 below.

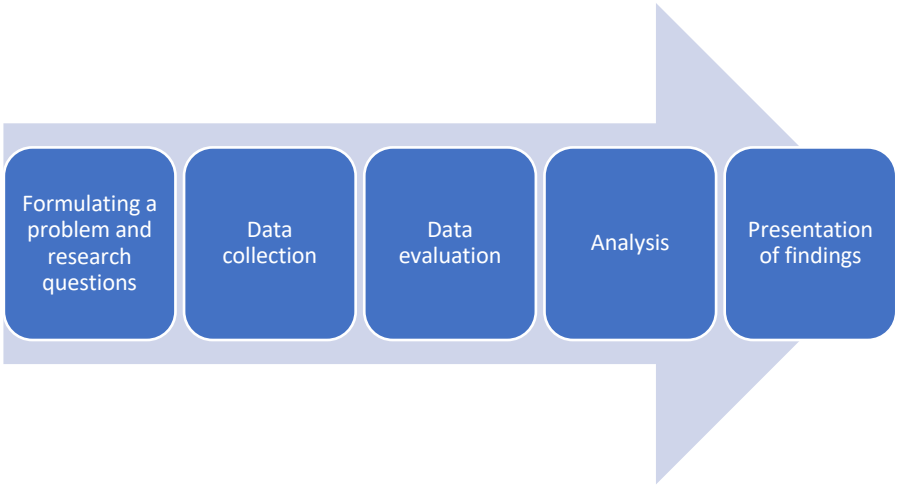


Figure 3.4 Stages of integrative literature review

The above steps and specific methods of the systematised literature review are detailed in the Chapter 4, which also includes the results and discussion of the findings. The analytical procedure however, will be presented next.

At stage 4, the analysis of the integrative review was conducted in four steps. First, publications and articles were put into categories based on the participatory methods prevalent in their research designs. Second, within each category, studies were analysed following a narrative synthesis. As an analytical approach in systematic reviews, narrative synthesis integrates the results of reviewed studies that have different designs, capture extensive range of research questions and/or cannot be assessed via meta-analysis (Ryan, 2013). Narrative synthesis follows a text-based approach to summarise and explain findings from the reviewed studies (Popay et al., 2006). The data selected for the analysis were

findings reflecting the project and study aims and research questions: participatory approach to conducting research with children with DLD, peer relationships of children with DLD, and links between their linguistic competencies and socioemotional behaviours. The narrative synthesis therefore brought together peer relationships studies of children with DLD and explored the within-child characteristics of children with DLD.

Third, cross category findings were combined using narrative synthesis. For example, learnings relevant to psychosocial attributes from interview studies were compared and contrasted with findings from categories of studies focusing on different research methods. Lastly, conclusions were made pertinent to the participatory approach with children with DLD and their within-child characteristics, specifically their language abilities, psychosocial attributes and socioemotional behaviours. Reviewing the links between language and behaviours, context of peer relationships, participatory research methods, and the nature of the narrative synthesis resulted in a complex and comprehensive data. To support data analysis and its multiple steps, a computer assisted programme for qualitative data analysis MAXQDA 2020 was used to code and organise the data. Appendix D illustrates some of the analytical steps and supporting tools.

Similar to the systematised literature review, the phenomenon of peer relationships, DLD, and participatory research approaches with children represented complex research areas that the second part of the project addressed by applying mixed methods to multiple case studies.

3.3 Case studies

Delivering the overall objectives of the project was supported with mixed methods approaches. In part two of the project, I applied mixed methods in a series of case studies. As a research strategy, case studies have been used for "in-depth, multi-faceted explorations of complex issues in their real-life settings" (Crowe et al., 2011, p.1). Case studies helped contain the peer relationships and DLD profile information about participating children with DLD in a meaningful and encompassing manner. The twofold definition of a case study captures its *scope* and *features* that were applicable to part two of my project:

A case study is an empirical method that

- investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when
- the boundaries between phenomenon and context may not be clearly evident.

A case study

- copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
- benefits from the prior development of theoretical propositions to guide design, data collection, and analysis, and as another result
- relies on multiple sources of evidence, with data needing to converge in a triangulating fashion (Yin, 2018, p.15).

The large scope and specific features of case study resonated with the part two objectives to gain understanding of the within-child factors promoting the peer relationships of children with DLD in school. Moreover, the technical elements of a case study appropriately supported the collection and analysis of various data: specific to children with DLD profile, coming from multiple informants, and having qualitative and quantitative nature.

Case study practicalities were particularly relevant to researching children with DLD due to children's younger age, communication difficulties, and heterogeneous profiles. In piloting, multiple visits to school showed how children became gradually more open to the researcher when, for example, one child made jokes during one-to-one meetings. Furthermore, the pilot study established peers as an invaluable source of information about the perceived character and behaviour of children with DLD. Therefore, collecting data in multiple meetings and from multiple sources helped build rapport and gather more comprehensive information.

In addition, the core topic of the project - peer relationships of children with DLD - aligned with the two-part structure of a case study. A *case* in a case study comprises of a subject (children with DLD) and analytical frame or object (peer relationships) (Thomas, 2011; Wieviorka, 1992). The two-part understanding refers back to Yin's (2018) scope definition of case study, when the cases of children with DLD are placed within their real-life context of peer relationships and boundaries between language, communication, and behaviour of children with DLD and their peer relationships are unclear. Hence, case study definitions confirmed this approach as a suitable strategy for exploring the within-child characteristics supporting the peer relationships of children with DLD.

Previous case studies with children with DLD had not considered peer relationships as the main research topic. Instead, they aimed to understand children's profile and behaviours (e.g. Brinton & Fujiki, 1999; Olswang et al., 2001; Peets, 2009) or evaluate interventions (e.g. Fujiki et al., 2013). All of these scholars considered peer relationships in data collection,

using sociometric measures or observations. Other qualitative researchers, who moved beyond the clinical focus of language difficulties, only touched on peer relationships as an aspect of children's lived experiences (McLeod et al., 2011). Consequently, adopting a case study approach and focusing on peer relationships complements the current knowledge about children with DLD.

To summarise, conducting case studies was justified due to the complex nature of research questions and suitability of the scope and features of the approach with the phenomenon of 'the peer relationships of children with DLD.' In addition, case studies have not yet been applied to research about the peer relationships of children with DLD. More specific details about the conducted case studies follow next.

3.3.1 Application of case study approach in part two of the project

In part two of the project, I applied a case study approach to collect data about children with DLD and their peer relationships in school. A number of children with DLD were studied as cases or multiple bounded systems, for which in-depth data was collected from a number of information sources (Silverman, 2006). In the literature, this approach has been referred to as multiple or collective case study design (Creswell, 2007; Crowe et al., 2011; Thomas, 2011). Data collected in the multiple studies was analysed to answer the research questions in Chapter 5, Chapter 6, and Chapter 7, resulting in an embedded multiple-case design. Depending on the number of cases and unitary or multiple units of analysis, Yin (2018) specifies four types of case study designs, shown in Figure 3.5:

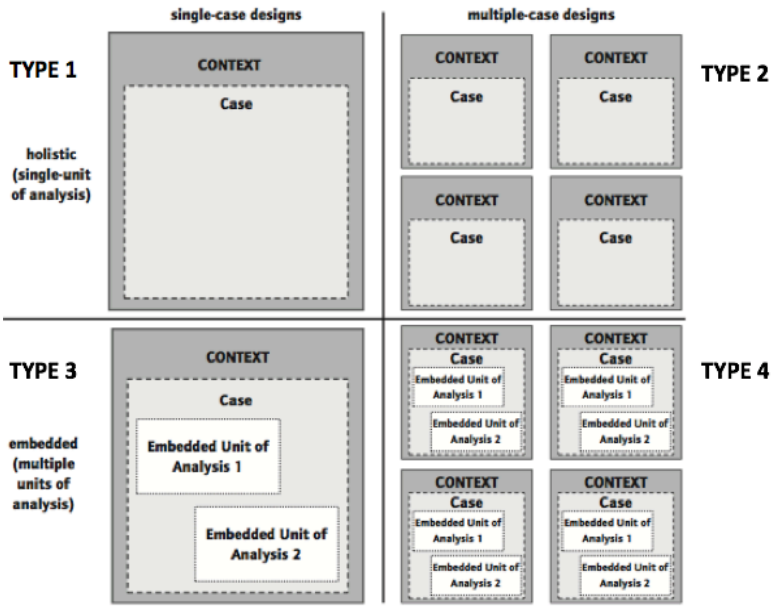


Figure 3.5 **Case study designs** (COSMOS Corporation, published in Yin, 2018, p.48)

From the above designs, Type 4 fits best with the purpose of the enquiry into the peer relationships and wellbeing of children with DLD. It emphasised individual cases and their context while pooling themes through the thread of embedded units of analysis. Embedded case studies supported analysing more than one unit or object of interest (Scholz, 2002), which in this project were the social functioning of children with DLD, their conceptions of friendship, and their peers' perceptions of children with DLD as friends. Yin (2018, p.287) defines embedded unit of analysis as "a unit lesser than and within the main case in a case study, from which data also are collected." In previous qualitative analysis of a multiple case study involving six children with DLD (Brinton & Fujiki, 1999), each case was analysed individually. Therefore, embedded analysis will introduce a new analytical method in studies involving children with DLD.

In this study, the embedded units of analysis will correspond to the data relevant for answering questions specific to chapters 5, 6, and 7, namely what key characteristics of language, psychosocial attributes, and behaviours prevail in interactions of children with DLD (Chapter 5), how children with DLD conceptualise friendships (Chapter 6), how peers perceive children with DLD as friends (Chapter 7). Even though these themes can be analysed individually, their findings informed the overall project about what is going on in the phenomenon of peer relationships of children with DLD. Therefore, following an embedded multiple case study design could be justified as a suitable methodology for this study.

To expand on the case study rationale, specifying the dimensions of the strategy may be useful. First, the type of the case study was instrumental with the central attention on the phenomenon of peer relationships and not the actual case as in the intrinsic type with a pre-determined case that inspired the research (Crowe et al., 2011; Stake, 2000). Therefore, as instrumental cases, children with DLD participating in the study were selected from the population of children with DLD, they were not 'given' (Creswell, 2007). Next, the case studies were conducted in parallel, which means that cases were carried out independently. Completing one case did not profoundly influence the process of conducting the next one (Thomas, 2011). Case studies were exploratory and both quantitative and qualitative data were collected and analysed.

3.3 Research process

This section outlines the research process applied to part two of the project. It describes the sampling procedures, qualitative and quantitative methods used in data collection, and data analyses.

3.3.1 Identifying participants

Sampling decisions involved sampling strategy and sample size. I followed a purposive sampling strategy to ensure that cases provide relevant information, context diversity, and prospects to study the complexity of the phenomena (Stake, 2006). Creswell and Poth (2018) acknowledge the selection of unusual cases in multiple case studies to represent a variety of experiences and perspectives. In the current study, school settings and age were criteria for achieving case diversity.

The recommended sample size in a multiple case study design differs. Teddlie and Tashakori (2009) propose six to twenty-four cases and Stake (2006) endorses a range of four to ten cases. Lower than four cases would not give sufficient variety of data and having a higher number of cases would result in too much specific information that may not be possible to cross analyse in a meaningful way (Stake, 2006). Yin (2018) holds that four to five cases in a single study will provide sufficient information to identify themes within a case and conduct a cross-case analysis.

Referring to case studies targeting children with DLD, the sample sizes vary from one (Olswang et al., 2001; Wells, 1994), two (Tommerdahl & Drew, 2008), four (Fujiki et al., 2013; Peets, 2009) to six cases (Brinton & Fujiki, 1999). In terms of selection, Peets' (2009) cases represent different classroom contexts, while Brinton and Fujiki's (1999) varied the social-behavioural profiles of individual children. Not reporting the reasons, Fujiki et al. (2013) selected only four out of eight children meeting DLD criteria. Since there is no one-way to sample selection, the current project aligned with its needs and scope.

My purposeful sampling strategy aimed at identifying children with DLD from Mainstream and Enhanced Provision school settings in combination with different age (6-8 years) to represent diverse cases of six children. I was aiming for an equal gender representation; however, gender was not an additional diversity criterion.

In reality, identifying participants turned more challenging than originally expected. I promoted the project via information leaflets distributed to schools in Cambridgeshire, North

London area, social media through charities supporting children with Speech, Language, and Communication Needs (e.g. NAPLIC, Afasic, RADLD.org), and also in person at the conferences and networking events (e.g. the Psychology of Education section of the British Psychology Society, Cambridge Festival of Ideas, Cambridge Social Science Festival). The lack of responses from Mainstream Schools resulted in initiating a new recruitment strategy via the Health Research Authority in the UK. The application process took almost six months. During this time, I also expanded part two of the project to children with DLD from a Specific Speech and Language Disorder Class. Ultimately, adding a new school setting resulted in a larger sample of participants, representing diverse educational environments. Table 3.1 gives basic overview of participating children with DLD and their friends who joined part two of my research project.

Table 3.1 Participating children

School setting	**Enhanced Provision**	**Specific Speech & Language Disorder Class**	**Mainstream Class**
# of children with DLD	**3**	**5**	**6**
Gender (*girls:boys*)	*0:3*	*2:3*	*5:1*
# of friends	3	1	6
Gender (*girls:boys*)	*2:1*	*1:0*	*5:1*

The selection of participating children with DLD started through the distribution of leaflets presenting the project more broadly, targeting the peer relationships and wellbeing of children with DLD. The leaflet included a link and a QR code to an online version of parent/carer questionnaire. The background information in the questionnaire included the school name and email address of the parent/carer. After receiving questionnaire responses, I followed up with the school and parents.

The selection criteria were broad, capturing the variety of DLD profiles.

Inclusion criteria

- identified by speech and language therapists, teachers, or teaching assistants as having DLD;
- children aged 6-8 years;
- children in receipt of language intervention;

- English as the primary language of education (multilingual children, who have been living in the UK or RoI for at least five years);
- score below 55 on the Global communication composite AND score 0 or above on the Social-interaction deviance composite of the Children's Communication Checklist-2 (Frazier Norbury et al., 2004);
- OR standardised score 1SD below the mean on the sentence recall subtest of the Clinical Evaluation of Language Fundamentals, 4th Edition (Semel et al., 2006), AND sentence comprehension subtest of the Assessment of Comprehension and Expression 6–11 (Adams et al., 2001).

Exclusion criteria

- children with primary difficulties that are not language and communication based;
- children at the age of 5 and younger OR at the age 9 and older;
- multilingual children, who moved to the UK or the RoI in less than past five years (at the age of 1-3).

Each child's DLD profile was specified through the Children's Communication Checklist (CCC-2; Bishop, 2003) and my direct assessment with the children, which I conducted after obtaining consent from schools and parents. When visiting schools, I aimed to follow the school visit plan outlined in Table 3.2. However, I remained flexible and adjusted my visits to the needs of the child and school.

Table 3.2 School visit plan

School visits/ meetings	Participants	Activities	Details
No.1	All class	Unstructured observation	Classroom - no interaction in the mainstream classroom
No.2	All class	Unstructured observation	Playground - no interaction in the mainstream classroom
		Friendship activity	Sociometric nominations Friendship nominations
No.3	Child with [1]DLD	[1]ACES Facial Expressions	Photos of children faces
		[2]ACE	Assessment of comprehension & expression
		2nd order [3]ToM	Completing stories
No.4	Child with DLD	Wellbeing interview	Picture Me book (Merrick, 2014) Picture task (Merrick, 2009)
		School mapping tour	Walk and drawing in a room
No.5	Child with DLD	Friendship interview	How I feel about my friends in school…. Circle of Friends activity Friends drawing Friendship formation (Selman, 1979) Friendship quality (Dunn et al., 2002)
No.6	Friend	Friendship interview	Same as above, with a child with DLD
	Child with DLD	Ravens	Ravens Coloured Matrices
		[4]TEC	Test of Emotion comprehension
		Recalling sentences	[5]CELF-4 Booklet
	Child with DLD & friend	Free play	Video recording with a friend in free play activity
No.7	Child with DLD	Retrospective interview	Watching recording of the free play
		Validation	Preliminary findings from notes
	Friend	Retrospective interview Validation	Same as above, with a child with DLD

[1]*DLD – Developmental Language Disorder*
[2]*ACE – Assessment of Comprehension and Expression*
[3]*ToM – Theory of Mind*
[4]*TEC – Test of Emotion Comprehension*
[5]*CELF-4 – Clinical Evaluation of Language Fundamentals, version 4*

In addition to children with DLD, the study involved their classroom friends, identified following the procedures specified in section 3.5.1 Sociometric analyses and in Appendix K. After obtaining consent from the friends' parents or carers, the dyads joined a free play activity that I video recorded and played selected clips back to both children individually in one-to-one meetings. Additional to the play activity, friends participated in a one-to-one friendship, retrospective, and validation interviews with me.

3.3.2 Interacting with children with DLD in one-to-one meetings

When conducting studies with children with DLD, their maturity and communication levels need to be considered. For children under the age of nine, who were targeted in part two of the current project, exploring abstract concepts such as wellbeing required carefully designed questions and methods. I was inspired by the Mosaic approach of Clark and Moss (2001), who developed a framework for listening to children under five years of age. Clark and Moss (2001) considered even young children as experts in their own lives and this understanding very much aligns with my own approach to researching the peer relationships and wellbeing of children with DLD. Mosaic approach builds on multiple sources of data generated with and by children (e.g. structured and casual conversations, art and photographs produced by children), and also by adults (e.g. observations, parent reports, teacher interviews), which formed form pieces in the mosaic, giving a picture of children's daily experiences (Clark, 2001; Clark & Moss, 2001). The multi-method of Mosaic approach aligned with the case study design of my project.

Multiple methods in studies with children are art-based and may include drawing, mapping, diagrams, modelling, photography, role play, and other data collection methods (Clark, 2011; Greig et al., 2007). Art-based or visual tools are used to elicit the information or as prompts to make the concepts of enquiry more approachable for children (Clark, 2011; Greig et al., 2007). Visual methods enable children to engage with the researcher by bringing different modes of communication together (Clark, 2011). To support children's language and communication needs, the selected quantitative and qualitative tools used visual supports (e.g. Raven's matrices) and were art-based (e.g. drawing).

Further to overcoming communication barriers, additional aspects of conducting studies with six- to eight-year-old children with DLD involve their ability to reflect, power imbalance in the adult-child interactions with the researcher, and the ability of the researcher to elicit the important messages and nuances in children's communication. To identify and address any

potential obstacles that may arise when directly interacting with children, I met with children multiple times.

Details of the methods used in part two of the project are detailed in the next section.

3.4 Research procedures and tools

In line with the mixed methods approach and case study design, the research methods combined quantitative and qualitative tools. I describe the quantitative and qualitative domains in separate sections.

3.4.1 Quantitative tools

The domains of quantitative assessments are outlined in Table 3.3 and involved a number of informants, including parents/carers, teachers, children with DLD, and their classroom peers.

Table 3.3 Domains of quantitative assessment

Informant	Domain
Parent/carer	Child's family background
	Child's language, communication, social interactions
	Child's social and emotional functioning
Teacher	Child's social and emotional functioning
Child	Language and communication
	Nonverbal abilities
	Social cognition (traditional tools Theory of Mind, emotion understanding)
Child/peers	Social competence

Quantitative measures provided background information about the participating children with DLD. They are part of the case summary information presented in Chapter 5. Some tools, such as child's family background questionnaire and the traditional social cognition measures, are not used to answer the research questions of this project.

Next, I will introduce and justify the tools assessing children's language, communication, social and emotional functioning, and nonverbal abilities. In Appendices B to H, I include the psychometric properties of these tools and the remaining child measures.

3.4.1.1 Children's Communication Checklist-2 (CCC-2)

There are numerous tools available for language assessment (e.g. Test of Pragmatic Language, TOPL). CCC-2 (Bishop, 2003) was selected as the most suitable due to its identification of pragmatic, receptive, and expressive language skills as well as assistance in

screening for autistic spectrum disorder (Frazier Norbury et al., 2016; Wilkinson, 2012). In addition, CCC-2 has been widely used in studies targeting children with DLD and peer relationships (e.g. Andres-Roqueta et al., 2016; Laws et al., 2012). Volden and Phillips (2010) found CCC-2 to be more sensitive than TOPL in identifying pragmatic language difficulties in children who score high in structural language and nonverbal cognitive skills. This is important for detecting the fine skill crucial in peer interaction and fits well with the purpose of this project.

CCC-2 consists of 10 subscales (Table 3.4), targeting specific aspects of children's language, communication, and social interaction. Parents/carers rate items as being observed on a scale from 0 (never, or less than once a week) to 3 (always, or more than twice a day).

Table 3.4 Subscales of CCC-2 and sample items

Subscale	Sample subscale items
A. speech	Simplifies words by leaving out some sounds, e.g. "crocodile" pronounced as "cockodile", or "stranger" as "staynger"
B. syntax	Gets mixed up between he/him or she/her, so might say "him is working" rather than "he is working", or "her have a cake" rather than "she has a cake".
C. semantic	Is vague in choice of words, making it unclear what s/he is talking about, e.g. saying "that thing" rather than "kettle".
D. coherence	It is hard to make sense of what s/he is saying (even though the words are clearly spoken).
E. inappropriate initiation	Talks to people too readily: e.g. without any encouragement, starts up a conversation with a stranger.
F. stereotyped language	Pronounces words in an over-precise manner: accent may sound affected or "put-on", as if child is mimicking a TV personality rather than talking like those around him/her.
G. use of context	Ability to communicate varies from situation to situation - e.g. may cope well when talking one-to-one with a familiar adult, but have difficulty expressing him/herself in a group of children
H. nonverbal	Looks blank in a situation where most children would show a clear facial expression - e.g. when angry, fearful or happy.
I. social relations	Is left out of joint activities by other children.
J. interests	Shows interest in things or activities that most people would find unusual, such as traffic lights, washing machines, lamp-posts.

Subscales target aspects of language and communication. Structural language subscales include speech, syntax, semantic, and coherence. Pragmatic language subscales include

inappropriate initiation and nonverbal communication. Social interaction impairments are measured by the social relations and interests subscales.

The score from CCC-2 subscales can be combined to generate a General Communication Composite (GCC) and Social-Interaction Deviance Composite (SIDC). The GCC is a sum of all subscales except for social relations and interests, which are the composites of social interaction impairments. The SIDC composite is calculated by subtracting the sum of pragmatic and social interaction impairments (E+H+I+J) from the sum of subscale scores that tapped structural language (A+B+C+D). To recognise DLD difficulties in children with DLD, subscale and composite scores are reported in Chapter 5, which summarises the cases.

3.4.1.2 Strengths and Difficulties Questionnaire (SDQ)

For teachers and parents/carers concerned about children's behaviours, the Department for Education (2016) recommends SDQ as an initial screening tool to assess pupil's mental health and behavioural difficulties. SDQ has been commonly used in studies targeting children with DLD (e.g. Bakopoulou & Dockrell, 2016; Conti-Ramsden & Botting, 2004) and was distributed to adult informants in the project.

Other alternatives to SDQ include the Health of the Nation Outcome Scales for Children and Adolescents (HoNOSCA) or the Achenbach System of Empirically Based Assessment (ASEBA), which have a more clinical focus on behavioural difficulties. Since the purpose of this project was rather general and with no assumptions of psychopathology, SDQ was a more suitable tool to assess general wellbeing and behaviours of children.

3.4.1.3 Assessment of Comprehension and Expression 6-11 (ACE)

Verbal assessment helped establish the levels of the participants' language development. ACE is widely used to identify children with DLD, monitor their progress or evaluate intervention (Adams et al., 2001). With the use of pictures, the tool extensively assesses comprehension (sentence, verbal, non-literal), expression (vocabulary, sentence formulation, semantics), and narrative construction of children between the ages of six and eleven years. ACE has been used in research studies with children with DLD (e.g. Gibson et al., 2013; Hardiman et al., 2013) and its sentence comprehension and naming subscales were used for data collection in this project.

3.4.1.4 Clinical Evaluation of Language, version 4 (CELF-4)

The fourth version of CELF complemented the battery assessing the language abilities of participating children with DLD. CELF-4 was developed to evaluate language difficulties and help with diagnostic assessment (Semel et al., 2006). Containing 19 subtests, CELF-4 gives information related to expressive and receptive language, working memory, and phonological structure (Semel et al., 2006). Its comprehensiveness is complemented by observational data from teachers and parents, who report on a child's language abilities (Semel et al., 2006). Scholars use CELF regularly (e.g. Bakopoulou & Dockrell, 2016; Gibson et al., 2013). Only the Sentence recall subtest was used in data collection.

3.4.1.5 Raven's Coloured Progressive Matrices (CPM)

The performance IQ assessment helps identify significant levels of non-communication related characteristics, which may contribute to children's peer relationships. Earlier versions of Raven's coloured progressive matrices (CPM) was deployed in studies on peer relationships and children with DLD (e.g. Andres-Roqueta et al., 2012; Mok et al., 2014). This project used this tool because it is not language based.

To summarise, the selected quantitative measures are well-established and have been commonly used in studies involving children with DLD. I piloted the selected tools used directly with children with DLD to experience delivering these measures to children, estimate time demands, and make adjustments as needed.

3.4.2 Qualitative tools

Similar to quantitative domains, I piloted tools assessing the qualitative domains of this project to experience interacting with children and assess the suitability of initially considered tools. I briefly described the pilot study in section 3.1.1 Structure of the research project.

Before describing the qualitative tools, I will present their overview in Table 3.5.

Table 3.5 Qualitative tools

Unstructured observations	Classroom Playground	
Children with DLD interviews	Friendship quality	Dunn et al. (2002)
	Friendship formation	Selman (1980)
	Wellbeing	Guided school tour (Clark, 2001) Lyons and Roulstone (2018)
	Reflective	Clips from video recording of free play activity with a friend
	Validation	Researcher's notes on preliminary findings
Art-informed activities	Friendship	How I feel about my friends in school…. (McLeod et al., 2006) Circle of Friends My classroom friend (drawing, art & craft)
	Wellbeing	Illustrations activity – categorisation (Merrick, 2009) Talking about pictures (Picture Me, Merrick, 2014) School mapping
Self-reflective element	Research diary	Notes and reflections captured after school visits and one-to-one meetings with children

I started building the 'mosaic' of participating children with DLD with unstructured observations of children in a classroom and playground. I followed narrative accounts and took field notes answering the questions: *What is happening here? What is it like to be here? Who is involved?* (Clark, 2011). Some of the observed snapshots were discussed in one-to-one meetings with children.

A guided school tour is another method used in the Mosaic approach (Clark, 2001). I followed a non-directed tour, and asked children with DLD to show me the places they like in school. I then asked about the events, peers, activities, and emotions that children with DLD linked with individual places. We then returned to a one-to-one meeting and drew a school map. During the activity, children with DLD described their drawings and elaborated on their experiences of the places. Interview transcription and analytical processes are further specified in section 3.5.2 Framework Analysis.

Next, I will describe the specific interview tools that I used to explore friendship quality, friendship formation, and wellbeing with children. The full interview schedules are included in Appendix N.

3.4.2.1 Friendship quality interview

Children with DLD and their friends were invited to a one-to-one friendship interview. The interview started with a couple of warm up activities. The first one invited children to indicate "How I feel about my friends in school…" on a printed paper with emoji of happy, neutral, sad, question mark in a circle, and an empty circle. The second activity, the Circle of Friends, was a visual adaptation of the sociometric assessment. A large target like chart with three concentric circles was presented to children, who were invited to draw themselves in the middle and their friends into either of the circles (Hoyte et al., 2014; Roulstone cited in Bercow, 2008). The inner circle represents best friends or those they want to play with almost all the time, the middle circle shows 'good friends' or 'children they like to play with a lot', and the outer circle is for 'just a little bit friends' or those with whom they 'like to play with a little bit or just sometimes' (Hoyte et al., 2014, p.24). I modelled the activity before inviting children to do the same in another set of three circles and give own reasoning (Roulstone, cited in Bercow, 2008). Modelling helped with establishing rapport and overcoming potential receptive language difficulties when explaining the activity.

After the initial activities, I invited children to draw or use art and craft items to portray their best friend. After a few minutes, I commented on their drawing and asked if it is okay to ask some questions about their friend. I followed the friendship quality interview schedule used by Dunn et al. (2002) with 5-year-old typically developing children because the schedule helps uncover friendship behaviours perceived as positive and negative. The questions listed in Table 3.6 below were worded to match the abilities of younger children and might therefore correspond to the language and communication of primary school children with DLD.

Table 3.6 Questions for friendship interviews

Question	Supplementary probes
1. What kinds of things does [friend] like playing with?	And what else?
2. What makes [friend] happy?	Is there anything else that makes [friend] happy?
3. What makes [friend] sad or upset?	Can you think of anything else that makes [friend] sad or upset?
4. What do you really like about [friend]?	Can you tell me more about how [friend] is/does [characteristic, behaviour]?
5. Sometimes friends annoy each other; is there anything you don't like about [friend]?	Is there anything else that you don't like about [friend]?
6. Do you do things together much at school?	How often do you do things together at school?
7. What do you usually play together?	How often do you play that?
8. Who decides what you play?	How often does [participant/friend] decide what you play?
9. Do you have fun together?	When do you usually have fun?
10. Do you and [friend] tell each other secret things and feelings?	How often do you tell each other secrets? How much
11. Most friends fall out or have arguments sometimes; have you ever fallen out/ quarrelled with [friend]?	What happened? How did it finish? How did you feel about it? Do you often fall out like that?
12. Do you usually play just with [friend], or are there other children who play with you both?	Who are they? How often do they play with you and [friend]?

Friendship interviews with children with DLD were not used in research studies except for informal responses (Laws et al., 2012) or interviews with older, +13-year-old participants (Myers et al., 2011). Thus, previously piloting the questions was important for identifying aspects that needed tailoring, such as changing present perfect tense to simple present or simple past tenses.

The interviews were transcribed and analysed using MAXQDA. More details on the transcription and analytical procedures are presented in section 3.5.2 Framework Analysis.

3.4.2.2 Selman's Friendship Formation interview

Identifying the key within-child characteristics contributing to peer relationships of children with DLD was one of the main research questions of this project. Social competence was considered as a distinct contributor, which I appraised by building on the Selman's (1979) tool assessing social understanding in relation to friendship. The tool is based on a social perspective-taking model (Selman, 1980) and is particularly relevant to my project because it is friendship specific, contributes towards the overall assessment of children's social competence, and draws on children's own understanding of friendship. Children do not need to grasp the context of scenarios presented in the more traditional tasks. Additionally, I deployed more traditionally used measures (e.g. change of location, theory of mind, emotion labelling) that I describe in Appendix J. Some observations from using the traditional tools with children are part of the case summaries but the data are not used to answer the research questions. Instead, I investigated social competence using the Selman's tool.

Selman's model of social understanding is described in Chapter 2. The model is used for assessing children's social competence through their views and experiences of friendship because it follows an interview schedule asking children about their own perceptions. This aligns with the overall qualitative and child-focused approach of my project. The model includes a friendship domain that assesses children's development in a number of areas.

Within friendships, Selman (1979) recognises five developmental stages that can be observed within six areas - *Friendship formation, Closeness and Intimacy, Trust, Jealousy, Conflicts, and Termination*. I selected to focus on *Friendship formation* because making friends is the first step to peer relationships. *Friendship formation* consists of distinct concepts: motives (why), mechanisms (how), and ideal friend descriptions (Selman, 1979). These particular concepts reflect the findings from Selman's and his team's studies with children, general areas of child development concerns shared by clinical and social psychologists, and areas of interest to explore differences in social understanding (Selman & Jaquette, 1977). Breaking down *Friendship formation* to these specific constructs enables a granule-level qualitative evaluation of children's social understanding. The developmental stages of friendship domain and the area of *Friendship formation* are described in Table 3.7.

Table 3.7 Stages in developing friendship and *Friendship formation* concepts, based on Selman (1979)

Stages	Age	Friendship domain	Perspective-taking	***Friendship formation* concepts: *Why & how friendships are made, the ideal friend***		
				Motives *Why?*	**Mechanisms *How?***	**Ideal friend**
0	3-7 years	Momentary physical playmate	Undifferentiated/ egocentric	Interact in play	Proximity & propinquity	Closeness of physical appearance & functional activity
1	4-9 years	One-way assistance	Subjective/ differentiated	Friends do overt activities that the self wants done	Tuning into the likes / dislikes / preferred activities of a peer	Knows what self likes doing and will do it with the self
2	6-12 years	Fairweather cooperation	Reciprocal/ self-reflective	Needs company & to be liked, social interaction	Coordinate context specific likes & dislikes	Reveals inner or true feelings, does not present a fake image
3	9-15 years	Intimate-mutual sharing	Mutual/ third person	General mutual support upheld over a period of time	Develops through shared experiences over time	Complementary personality, 'good person' to rub off
4	12 to adulthood	Autonomous interdependence	In-depth/ societal	Sense of personal identity through interpersonal relations	Builds up through series of stages, parallel with ontogenetic development of global stages	Relative concept, someone with a personality compatible with the self, empathic, sensitive

The evaluation of the conceptions of friendships in children with DLD was informed by the Selman's (1979) manual assessing interpersonal understanding. *Friendship formation* interview data was evaluated against the qualitative descriptors of the global developmental Stages 0 to 4, covering the age range from three years to adulthood.

Selman (1980) confirms that areas within a domain of social understanding may not have the same Stage due to the complexity of a domain, including the broad nature and multiple-layered concept of friendship. As a solution, Selman (1980) advises using the concepts or levels as a descriptive model of capturing an interpersonal understanding of an individual and note any considerable variances across the levels assigned to individual concepts.

Within each case, the data were broken down to areas corresponding to *Friendship formation* – why (motives), how (mechanisms) friendships are made, the ideal friend (Selman, 1980), and a peer not preferred as a friend. I added the last area for balance and to uncover potential differences in children's conceptions of a good and bad friend. The areas inform about children's friendship and making friends conceptions, and can be analysed to reveal children's level of interpersonal development within each domain.

The steps of the friendship interview and data analyses are captured on the left side in Figure 3.6. The *framework analysis* is portrayed in shapes with grey background. Between the charting and mapping/interpretation stages of the *framework analysis* (detailed in the section 3.5.2), I followed a detailed procedure of the *Friendship formation* analysis, which is outlined in the Selman's manual (1979). This step is portrayed under the Developmental Stages in the shape with white background.

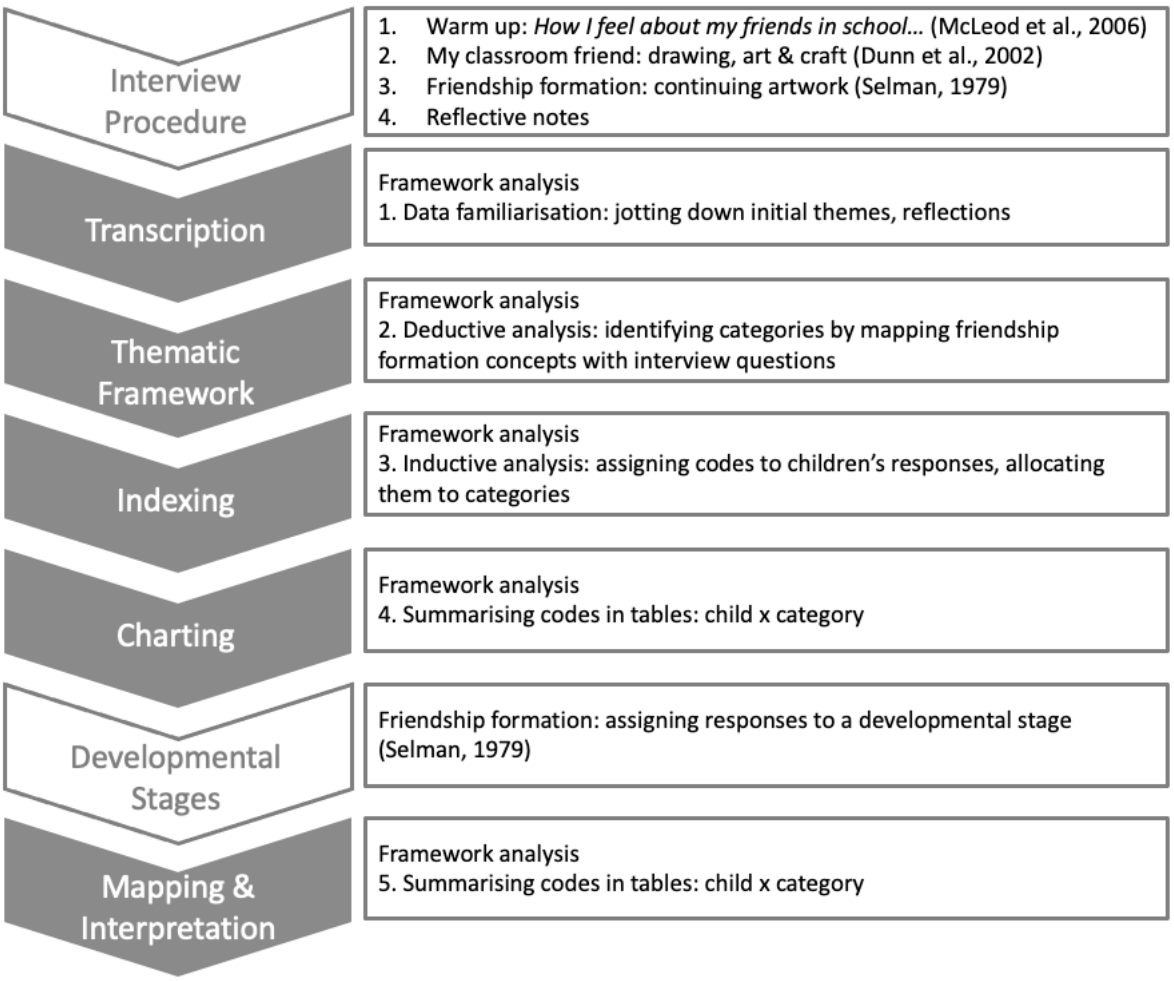


Figure 3.6 Friendship interview procedure and data analysis steps

Identifying *Friendship formation* concepts was conducted as a separate study in this project. Full details of the study, including the results and discussion, are presented in Chapter 6.

3.4.2.3 Wellbeing interview

Promoting children's participation, wellbeing interviews were visual-based and aimed to obtain children's perceptions about their peers and wellbeing experiences in school. The full wellbeing interview schedule is included in Appendix N. I started with illustrations originated from Merrick (2009) and used by Bercow (2008) and further developed by Merrick (2014) to explore if children with DLD can identify with any of the scenarios portrayed in the pictures and give more details about their school experiences and wellbeing. Following the pilot, I adjusted the method, and at first, I asked children to organise Merrick's (2009) illustrations under categories (okay/happy, unsure, wrong/sad). I followed with inviting children to elaborate on allocating illustration to unusual categories (e.g. illustration of bullying placed

under a happy category) or any illustration if there was no unusual allocation. I noted that this adaptation brought more dynamics to the activity, and gave children a sense of accomplishment as they received a sticker after completing every activity.

The more traditional wellbeing questions were based on the wellbeing interview of Lyons and Roulstone (2018), who worked with 9- to 12-year-old children with DLD. Their guide covered topics on self, family, peers, talking, school, leisure activities, and future. To align with the friendship and school contexts of the my project, I selected only questions relevant to peers and schools domains (Table 3.8).

Table 3.8 Peer and school interview questions (Lyons & Roulstone, 2018)

Domain	Interview questions
Peers	Can you tell me about your friends?
	What was the best thing you ever did with your friends?
	Can you tell me a story about when you made a new friend?
	Can you tell me a story about when you had a fight or fell out with your friends?
	Have others been mean to you? If the child answers yes to this question, he or she is asked to describe a time when others were mean to him or her?
	What makes a good friend?
School	Can you tell me about school?
	Can you tell me about what happens in a day in school, for example, maybe what happened yesterday?
	Can you tell me a story about your best day in school?
	Can you tell me a story about your worst day in school?
	Can you tell me a story about how you learned something new in school?
	Can you tell me about a time when you changed class or school?

I included the school domain questions in the wellbeing interviews schedule and the peers domain ones in the friendship schedule because of the alignment of the friendship theme with other tools. Although my interview schedules were clearly outlined, I was flexible and used specific tools according to the levels of children's engagement and situational circumstances. This aligned with my over child-centred approach to one-to-one meetings with children.

3.5 Analyses

In this section, I will cover the sociometric, case study, and framework analyses. To analyse the quantitative data collected using the language, communication, and social functioning tools, I followed procedures outlined in respective manuals. The parent and teacher questionnaires followed the procedures of the CCC-2 (Bishop, 2003; Frazer Norbury et al., 2004; Bishop & McDonald, 2009), and SDQ (Goodman, 1997). Sociometric data was

analysed as per the widely used processes (Coie et al., 1982; Fujiki et al., 1999a; Nangle et al., 2003; Sanderson & Siegal, 1995), which are detailed in section 3.5.1 Sociometric analyses and in Appendix K. After analysing this initial background details, I analysed the qualitative data using the framework analysis.

3.5.1 Sociometric analyses

Sociometric data was collected via peer nominations and best friend nominations. In peer nominations, all children in the classroom were invited to nominate three peers with whom they 'like to play with most' and three peers with whom they 'like to play with least.' Their responses were tallied and standardised because the participating children with DLD come from classrooms with different numbers of pupils. The scores of 'Liked Most' indicated social acceptance and 'Liked Least' showed social rejection by classroom peers (Coie et al., 1982). The combination of social acceptance and rejection scores led to identifying Social Status categories as illustrated in Figure 3.7 (Coie et al., 1982).

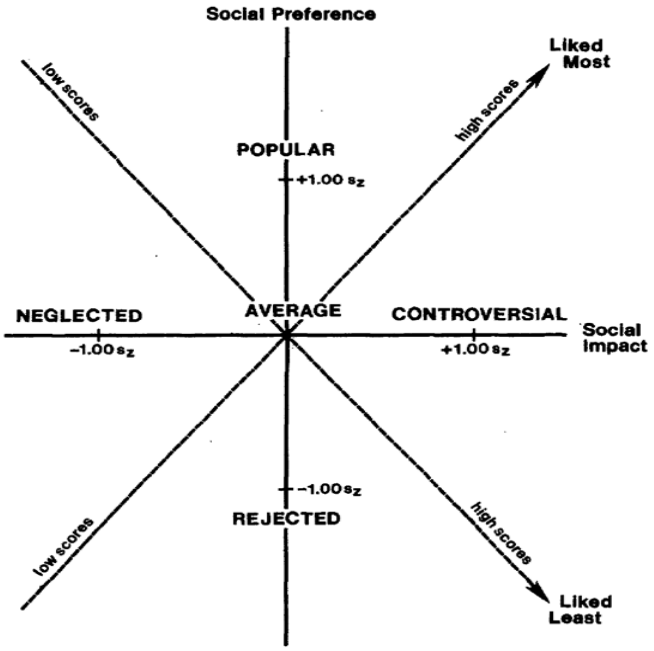


Figure 3.7 Social status categories of peer nomination (Coie et al., 1982, p.563)

Social Status categories of popular, average, rejected, neglected, and controversial are more indicative of how children with DLD are perceived in generally because they combine the positive and rejecting peer perceptions. To illustrate, using only social acceptance measure ('Liked Most') would not allow distinguishing between children who are actively disliked and those who are simply not nominated as 'Liked Least' (Coie et al., 1982). 'Rejected and 'neglected' categories help make this distinction. Equally, 'popular' and 'controversial'

categories help distinguish between children who score highly only on the 'Liked Most' measure ('popular') and those who score highly on both 'Liked Most' and 'Liked Least' measures ('controversial') (Coie et al., 1982). Therefore, including positive and negative nominations reflects peer perceptions more accurately

The second sociometric measure involved 'best friend' nominations. This led to identifying friends for further interviewing and play activity. First, children's 'three best friends' nominations were compared to identify reciprocal friends - when the child with DLD and their peer nominated each other as best friends (Sanderson & Siegal, 1995). If this was not the case 'nominated friends' - child with DLD nominate a peer or vice versa – were identified as a friend to interview and to join a play activity. Similar strategy of identifying a best friend regardless of reciprocity was used by Fujiki et al. (1999a) and Nangle et al. (2003). If a child with DLD was not nominated by any peers, teachers and teaching assistants helped identify a peer, with whom the child with DLD played with most.

3.5.2 Framework analysis

I conducted the framework analysis to examine the friendship, wellbeing, retrospective and validation interview data. At first, I transcribed the audio recordings in MAXQDA and followed the transcription conventions specified in Appendix O. I had considered Good practice guidelines for transcribing children's speech for clinical and research purposes issued by the Royal College of Speech & Language Therapists (2017). RCSLT points at several resources including International Phonetic Alphabet, Webfon, and other references to phonetic transcription tools. The RCSLT recommendations capture significant level of detail of children's speech such as phonetic transcription, consonants, connected speech, diacritic, voicing, and others. While all these elements of speech are crucial for clinical work of speech and language therapists, their symbols extend the transcript and make it less available for framework analysis. As this level of detail was not necessary to capture when answering the research questions about children's friendships and wellbeing, I chose to follow aspects of Jeffersonian (Jefferson, 1984) and Discourse traditions (Du Bois et al., 1992) that capture basic elements such as laughter, raised voice, and others, which give sufficient idea of the way children use speech, language, and communication in their interactions.

Thematic analysis was among the initial considerations of analytical approaches. In fact, Gale et al. (2013) consider framework analysis as part of a bigger family of thematic or qualitative content analyses. Like framework analysis, it is flexible about epistemological position and

works well with constructivist or essentialist/realist paradigms (Braun & Clark, 2006). Thematic analysis can explore meanings, experiences, and realities of individuals (essentialist/realist) as well as the ways participants makes those meanings and how the social context impacts on their perceptions (constructivist) (Braun & Clark, 2006, p.81). In this comprehensive way, thematic analysis and its extension, the framework analysis, aligned with my pragmatic approach and the ontology of multiple social reality.

Framework analysis involves considering pre-existing concepts as well as emergent learnings from data, and the use of matrices for cross analysing themes (Parkinson et al, 2016). The current project draws on existing research in children with DLD and their peer relationships, and this knowledge was built into the initial conceptual framework. In addition, the design of interviews and activities with children was already informed by previous studies that built on existing theoretical concepts. Therefore, adopting a 'fresh eyes' approach to analysis would not have been possible. The first FA stage, data familiarisation, helped with dictating the focus of the analysis as the collected data reflected some of the key themes (perceived language and communication) and even brought up new ones (physical dimension of friendship, playfulness). New codes and themes that emerged from data were incorporated in the coding scheme (Appendix P).

Details of the FA process are outlined in Chapter 6, section 6.2.9 Procedures for the analysis.

After completing the analyses and compiling the background details about participating children with DLD, I started to build case study reports.

3.5.3 Case study reports

In case study research, reporting is essential to present sufficient details of a case and interpretations leading to assertions (Creswell & Poth, 2018). In Chapter 5, I present case study reports that include summary tables and narrative summaries of each child. The information in narrative summaries is presented as interpreted by the researcher and in relation to evidence (Creswell & Poth, 2018).

3.5.4 Analysing case studies

Case study analysis was conducted in two stages. Initially, I organised the collected quantitative data in a password protected Microsoft Excel table and qualitative data in the MAXQDA programme. Transcribed interviews and artwork were uploaded and referenced to

individual cases in MAXQDA. The personally identifying data were not stored with the cases due to security reasons and the details were linked through a child/case ID.

With regard to multiple case studies, a cross-case analysis was applied to follow certain level of standardisation while maintaining individuality of each case (Stake, 2006). Stake's (2006) manual guidelines for this analytical framework inspired the analyses. The process involves using tables, where findings from individual case studies and themes across the studies are cross-tabulated and ranked to provide basic referential information for the analysis. At first, essential information from individual case reports was captured in 'individual case worksheets.' These worksheets included case ID, summary, uniqueness, prominence of individual themes, expected utility for developing a theme, conceptual factors, findings, possible excerpts, comments).

The third worksheet was a matrix outlining cases, themes, findings, and assertions from individual cases (Appendix Q). This manual cross-case analysis of themes helped navigate through the data and findings from individual case studies. Although the actual case data were coded in MAXQDA and a manual cross-case analysis may appear as a duplicity of efforts, this high-level overview supported mapping the prevalence of findings, themes and case details when making inferences. MAXQDA supported the analysis by organising themes, basic numerical summaries, and retrieving important quotations. The manual sheets guided data analysis, interpretation, and reporting, that assisted with making final inferences.

I started the case study analytical process by summarising the background information about children with DLD. I captured their school settings and sociometric nominations. The sociometric results varied, and there was no clear distinction observed across school settings. Therefore, I continued analysing children with DLD individually and not according to specific sociometric categories that could have revealed clusters of children with DLD who are more or less popular among peers than other participants.

Following Stake's (2006) guidelines, I mapped data into tables and applied relevant theoretical frameworks such as the social adaptation model (Redmond & Rice, 1998) and the conceptions of *Friendship formation* (Selman, 1979).

I split friendship quality data between children with DLD and their peers, and added themes on making friends strategies. I aimed to give a more comprehensive picture about the social functioning and friendships of children with DLD. Unique, prominent, and cross-themes were noted under each case. The case analysis involved developing a case

description (Yin, 2018), which I captured in a narrative included in each case summary table. Next, I merged all cases into an overview table to support a cross-case synthesis (Yin, 2018). Individual case tables are presented in Chapter 5. Appendix Q shows the overview matrix of all cases.

3.5.6 Making inferences from studies

To deliver the project's aims to update the current knowledge of peer relationships and research involving children with DLD, the findings from all studies were brought together and interpreted in Chapter 8. The meaning making process and its outcomes can be referred to as inference(s) (Teddlie & Tashakkori, 2009). I made inferences to the DLD scholarship, educational, speech and language therapy, and research practice (Chapter 8).

Adopting a mixed methods strategy for the project suggests a certain level of dynamics deriving from combining quantitative and qualitative approaches. For making inferences in mixed methods, it is important to carefully balance *emic* and *etic* considerations. The *emic* refers to "what is happening and deemed as important within" a particular study whereas the *etic* considers a predetermined area or issue of researchers' interest (Stake, 2000, p.23). Applied to the proposed project, *etic* embraces the topic of peer relationships and significant relations, events, variable, people, etc. overarching all studies. On the other hand, *emic* includes aspects specific to participants in case studies. In the construction of understandings, I aimed for coherent and systematic inference process (Teddlie & Tashakkori, 2009). Nevertheless, my active role as a researcher is inevitable for interpreting and making connections between the findings, which support or contradict across the enquiries (Teddlie & Tashakkori, 2009).

A specific to mixed methods is the combination of findings that may not result in their confirmation. Unlike triangulation which confirms findings in qualitative studies, inconsistent results in mixed methods demonstrate different realities or angles applicable to the researched phenomenon (Freshwater, 2007). This completeness expands the understanding by giving a more comprehensive picture or reveals conditions under which the inferences may or may not be true (e.g. Brannen, 2005; Teddlie & Tashakkori, 2009). Before acknowledging that findings indeed vary, the quality of research design and the rigor of interpretation process need to be reviewed to exclude inconsistencies, which may have contributed to the diverse findings (Teddlie & Tashakkori, 2009). In the current project, quantitative and qualitative approaches complemented each other and helped establish the credibility of inferences.

3.6 Reliability and validity

To enhance the overall project quality, several measures were taken considering tools and analytical methods. Regarding the quantitative data, the validity and reliability of questionnaires and self-reporting instruments are included among their psychometric specifications (Appendices B-H). Interview trustworthiness was set through data triangulation within a case, which entails reviewing different data sources (e.g. friend nominations, Circle of Friends, friendship interviews) and validating preliminary findings with participating children to confirm that my findings and their interpretation are accurate (Stake, 2006). This member checking strategy was adopted to a limited extend but in line with the participatory approach to the project. Although the final validation of findings did not involve participating children or additional researcher, alternative interpretations of data are offered in the discussion sections.

Strategies to minimise the researcher bias in the inference process and improve its credibility include *design quality* and *interpretive rigor*. Specific criterions cover suitability, adequacy, and consistency of methods, design, analysis, and interpretation (Teddlie & Tashakkori, 2009). I selected specific designs (systematised literature review, case studies), methods (e.g. observations, linguistic assessment, interviews, art and craft), and analyses (e.g. narrative synthesis, within and cross case analysis, thematic framework) to aptly support my research process, and thus, promote the trustworthiness of my findings. Moreover, I built on well-established research practices (e.g. PRISMA, within & cross case analysis, framework analysis) and theoretical frameworks (Social Adaptation Model, Selman's *Friendship formation*) to enhance the rigor of the project's findings. Individual research practices, their reliability and validity are further specified under sections in the Result chapters 4, 6, and 7.

Furthermore, the validity and reliability of data analyses was supported by MAXQDA and MS Excel software applications that are widely used among researchers. These tools helped with data management and analyses, allowing the review of individual steps, and study reproduction.

3.7 Ethical considerations

Involving children in research studies entails ethical considerations that are specific to their position of vulnerable population. To align with the ethical guidelines of the British Education Research Association (BERA, 2018), an ethical approval was sought from the Ethics Committee at the Faculty of Education and from the Health Research Authority. Both

bodies were provided with the risk assessment form, consent forms, and information sheets for approval. I tailored consent and information sheets to different participants – adults, children with DLD, their carers, and peers (Appendices L and M). The forms included details about personal information use as recommended by the University of Cambridge (2018, section H). While the relevant permissions were granted, other data compliance considerations had to be made.

As a legal duty, I ensured that my Disclosure and Barring Service check was updated and valid when visiting schools and meeting children. It was my responsibility as a researcher to eliminate any perceived adult-child power imbalance, when children might have felt obliged to participate and weaker due to their age, physical size, etc. (Morrow & Richards, 1996). Prior to every meeting, I sought children's assent, which aligns with the ethical practice to tackle the missing "legal capacity of children to provide written consent" (Field & Behrman, 2004, p.7). Before the actual data collection, all participants were reminded of the project purpose, recording, anonymity, and confidentiality rules that applied to the project. I kept reminding children about the possibility to opt out at any stage of the project even after data collection started. Before one-to-one meetings, I checked in with teachers and teacher assistants about the children's mood on the day, and whether anything might have happened that could impede our meeting. During the meetings, I kept asking children if they felt ok to continue when they appeared less focused. I remained observant and regularly checked-in with children about their readiness to continue with the meetings. At the end of the meetings, I thanked children for their participation and responses. I briefed them again about the study and reassured them of the data confidentiality and anonymity.

Some children may have difficulties understanding the concepts of research, peer relationships, and wellbeing. Therefore, I adapted my language to children's needs. I presented the goals of my engagement with the child as a way of *learning about how children make friends and how they feel about their friends in school so that I can help other children find friends*. I had tried out this wording during my Pilot study and children seemed comfortable and responsive during pilot meetings. As a result, I followed similar wording in the main project.

Further ethical concerns related to peer informants. Peers have a unique position to inform about children they know because they spend time together even when an adult is not present (Brownell et al., 2015). However, obtaining teacher and parental consents for peer interviews could be challenging as parents and teachers may be concerned about the potential impact of

the research on children's relationships (Card & Hodges, 2008). Sociometric reports do not seem to have this effect (Mayeux et al., 2007) and some researchers suggest giving participants option to conduct a joint or individual interview (Voltelen et al., 2017). However, there was a risk that information presented by peer may be contradictory to the other child and the children with DLD may not get to talk much because their typically developing (TD) peer could take over.

In a previous study of Lee et al. (2003), only TD children were interviewed about their peers with disabilities to learn about their relationships. Lee et al. (2003) do not report any ethical concerns about this practice; nevertheless, such a strategy evokes a rather overlooked research ethics and biased methods. In my project, both children with DLD and their TD peers participated in friendship interviews individually. As well as being ethical, this approach elicited both participants' perceptions on their relationship. In agreement, Cillessen and Bukowski (2018) recommend noting how the child views the group that accepts or neglects her/him even when interpreting any sociometric results. Learning both perspectives revealed more about relationships and addressed potential ethical concerns regarding peer informants.

Finally, observing children in class or even taking one of them out for a one-to-one meeting have made the rest of the class curious. Children are aware of their surroundings, and some approached me about meeting them as well. I gave neutral responses (e.g. *I can meet only a couple of children because I am alone and there is so many of you in the class, I will not have time*) and maintained the confidentiality by not referencing to DLD experienced by the target child. However, there was a case in the SSLD Class when more than half of the children from the class participated in the project. One of their classmates kept asking me and the teacher to meet me. In one of my last visits, I spent about ten minutes with this child, let them draw and use the art and craft items. We did have a brief conversation about their day and I did not record the session. I gave them stickers before they returned to class. Me and their teacher felt that this extra meeting was beneficial for the child because they felt less left out. This meeting did not have any implications for the project. My meetings in other schools went without similar experiences. The classmates seemed to be used to the children with DLD leaving the class for other meetings, most likely with their speech and language therapists.

Other ethical considerations involved data protection because the project involved collection of some private information (e.g. name, age, school type). I followed the General Data Protection Regulation (GDPR) and the Data Protection Act 2018 regulations. To comply with

research purposes exemption, data was safeguarded and saved in a password protected computer and file. I applied data minimisation and pseudonymisation. In part two, I used only one file linking participants' names to their assigned IDs that I used in other documents, databases, reports or information storage (e.g. MAXQDA). All other proxies were referenced in terms of general characteristics, e.g. parent, male friend, etc. The conditions referring to the decisions made about participating individuals and impact to their actual lives were fulfilled as well. And finally, the GDPR expectations did not intervene in any way with achieving of the research purposes; therefore, the research exemption could have been applied.

Academic expression exemption was considered since the principle of 'freedom of information' had to be protected in terms of proxies (teachers, peers, parents) informing about the targeted children with DLD. The data was "processed with the view to publication of academic (or journalistic, literary and/or artistic) material" (University of Cambridge, 2018, section C2). The publications remain in public interest because the project aimed to inform all stakeholders affected or interested in DLD. Following the GDPR would not comply with the academic purpose.

In addition to all the aforementioned points, I continued reflecting on ethical considerations throughout the project and discussed potential dilemmas with my supervisor, advisor, and fellow students.

3.8 Summary

This chapter outlined the methodological approaches that I adopted in my research project. I specified the philosophical background behind my research strategy and highlighted the participatory aspect of the project directly involving children. I further described mixed methods as the research design that I translated into the project structure and methods. Qualitative and quantitative tools complemented each and combined a variety of perspectives: children's, parents', and teachers'. Next, I gave overview of the analyses that I conducted. Finally, I outlined the key ethical aspects that I considered throughout my project. Given that my project consists of a number of studies, additional relevant methodological details are provided in the Results section next.

Overview of the Results section

This research project investigated the wellbeing and classroom friendships of children with Developmental Language Disorder (DLD). It aimed to identify key within-child characteristics contributing to the friendships of children with DLD. Considering the complexity of DLD profiles as well as peer relationships, the results section is presented in four chapters. The chapters include a series of formatted research papers and a chapter on case summaries. This format was developed to support the publication of my work throughout the doctoral research process. The results chapters are interconnected through:

1. A focus on the peer relationships of children with DLD and goals to improve the peer experiences of children with DLD in school.
2. Adoption of the Social Adaptation Model (SAM) of Redmond and Rice (1998), making links between language and behaviours in children with DLD.
3. Promotion of the child's voice using participatory research approaches that are promoted alongside child-centred interactions during data collection.

The aforementioned points interconnect the individual studies, each of which makes a unique contribution to the project and draw on each other to achieve the overarching project goal – to identify the key within-child characteristics promoting the peer relationships of children with DLD.

Next, I will present an overview of the studies included as individual chapters. Three of the chapters are at various publication stages with different peer-reviewed scholarly journals. My supervisor is a co-author of these manuscripts, and I will specify her contribution as per the Contributor Roles Taxonomy (2021).

Chapter 4 reviews the existing literature on peer relationships of children with DLD in a systematised way. Titled Reviewing the link between language abilities and peer relations in children with Developmental Language Disorder: The importance of children's own perspectives, chapter 4 considers the Redmond and Rice (1998) social adaptation model and targets studies involving children as informants. The analysis reviews the levels of their participation according to the research methods used in the reviewed studies. Findings further outline the links between language abilities and peer relationships of children with DLD. This chapter was published in the Autism & Developmental Language Impairments journal. As

the publication co-author, my supervisor contributed by acquiring funding for the project, supervising design and analysis, co-writing, reviewing, and editing the manuscript.

Chapter 5 contains the case study reports. It is titled *Case summaries* and summarises the case studies in tables and narratives and adopts a reflective research practice. Insights about each child with DLD enhance the understanding of their unique background, classroom context and the way they connect with others. Using Redmond and Rice's (1998) SAM model explaining links between language and behaviour, Chapter 5 gives a rich description of each case and reports the prevalent social functioning themes for each child. It concludes that language difficulties are not readily visible in children with DLD who are verbal. Peers appreciate creativity, caring, and protective behaviours in children with DLD.

Chapter 6 is titled *Friendship is…. "when we all play together." Exploring concepts of* Friendship formation *in children with Developmental Language Disorder*. It explores the ways children with DLD understand friendships and make friends. It maps their conceptions of Friendship formation with Selman's (1979) model of interpersonal understanding. The results describe differences among school settings that children with DLD attend and the role children assign to their language. This chapter was peer-reviewed by the Language, Speech, and Hearing Services in Schools journal. The included version addresses the reviewers' comments. My supervisor, who is the manuscript co-author, contributed to acquiring funding for the project, supervising design and analysis, co-writing and editing the text. I will present the content of this chapter at the 1st International DLD Research Conference organised by the DLD Project in Australia.

Chapter 7 titled *Children with Developmental Language Disorder as friends: The perspectives of their classroom peers* gains a more rounded picture of the peer relationships and inclusion of children with DLD. Friendship quality interviews reveal how peers see children with DLD as friends and their advice to children with DLD for making more friends. Chapter 7 deems peers as proxies to inform inclusive education and therapeutic practices. This chapter is being peer-reviewed by the Research Papers In Education journal. My supervisor co-authored the manuscript and contributed to acquiring funding for the project, supervising design and analysis, co-writing, and editing the document.

Findings from Chapters 4-7 are brought together in Chapter 8, which concludes by reflecting on the overall research project. The overview of studies, their research objectives, research questions, methods, and results are presented in Appendix R.

Results Part One

Part one of the results contains the analytical research synthesis of empirical studies presented in the following chapter:

Chapter 4 Language abilities and peer relationships in children with DLD

This chapter is a systematised literature review of studies involving children with DLD in the investigation of their peer relationships. It contributes towards the overall project goals. At first, it identifies research methods used in the reviewed studies. Methods are categorised to reflect the levels of children's participation in data collection. A descriptive summary of research approaches provides strategies facilitating children's participation in studies. Second, the analytical synthesis of the reviewed studies supports delivering the second goal of the project – to identify the within-child characteristics promoting the peer relationships of children with DLD.

Chapter 4 Language abilities and peer relationships in children with DLD

Chapter 4 reviews empirical studies on the peer relationships of children with DLD. It follows the process of a systematised literature review to map studies that directly involve children with DLD. The review seeks to identify the extent of genuine participatory methods used in identified studies, examples of good practice in participatory research with children with DLD, and insights informing about the links between language and peer relationships of children with DLD. The results are generated following a narrative synthesis and are discussed according to language, psychosocial, and behavioural aspects as outlined in the Social Adaptation Model (SAM) of Redmond and Rice (1998).

Chapter 4 is written in a format of an academic article and was published in the Autism & Developmental Language Impairment journal in 2021.

Abstract

Background and aims: Children with Developmental Language Disorder (DLD) are at risk of difficulties in their friendships and peer relations. The present review explores how research directly involving children with DLD can inform our understanding of peer relations in this group, and how research insights may change according to the nature of their involvement in the studies. We further examine how these findings might shape current theoretical understandings of the links between language impairment and peer relations.

Methods: An integrative review methodology was used in order to identify relevant studies and synthesise the findings. A structured database search was carried out using the qualitative PICo framework; Population = 4–12-year-old children with DLD, phenomenon of Interest = peer relations, Context = research studies directly including children. After screening, 52 studies were included in a narrative research synthesis.

Main contribution: We identified six main types of study that directly included children with DLD; interview, sociometric, self-report, task-based, naturalistic observation and staged observation. Interview-based studies were the most likely to use a meaningful participatory approach. Indications of good practices for participation included reporting on involvement practices, seeking child assent, adapting materials and language used, using visual supports, using child-preferred communication methods and using art-based approaches. Findings from the narrative synthesis of studies highlight the importance of friendships to quality of life, and the role of pragmatic language skills and self-perceptions in building friendships.

Conclusions: Research on the peer relations of children with DLD is in the early stages when it comes to taking a participatory approach, however there are some examples of inclusive practice from which the whole field can learn. The findings show that research that directly includes children with language disorders and takes account of their communication challenges can help build a more comprehensive knowledge of their world and leads to interesting avenues for interventions targeting social adjustment.

Implications: Clinical implications are discussed with reference to the highlighted pragmatic language and social needs of children with DLD, which are typically not addressed unless disproportionately affected in comparison to structural language impairments.

Keywords

Developmental language disorder, participatory research, peer relations, child voice

Reviewing the link between language abilities and peer relations in children with Developmental Language Disorder: The importance of children's own perspectives

Janik Blaskova, L., & Gibson, J. L. (2021). Reviewing the link between language abilities and peer relations in children with Developmental Language Disorder: The importance of children's own perspectives. *Autism & Developmental Language Impairments*. https://doi.org/10.1177/23969415211021515

4.1 Introduction

Developmental Language Disorder (DLD) is a common neurodevelopmental condition characterised by persistent language difficulties that have an impact on everyday life, and which are not explained by concomitant conditions such as autism or sensory disabilities (Bishop et al., 2016; Frazier Norbury et al., 2016). Children with DLD are at higher relative risk of poor mental health outcomes when compared to children with typical language development (Conti-Ramsden & Botting, 2008; Yew & O'Kearney, 2013). Peer relations and friendships represent one of the most vulnerable areas of their functioning (Conti-Ramsden et al., 2013; Lloyd-Esenkaya et al., 2020; St Clair et al., 2011). In comparison to their typically developing (TD) peers, children with DLD are less popular and report having low quality friendships in adolescence (Durkin & Conti-Ramsden, 2007; Fujiki et al., 1999a; Laws et al., 2012).

The social adaptation model (SAM) proposed by Redmond and Rice (1998) suggests these social challenges arise because the poor language abilities of children with DLD bias peers against them and also restrict them from fully participating in social interactions, further decreasing opportunities to improve communication skills (Redmond & Rice, 1998; Rice, 1993). Recent research evidence suggests that it is this increase in peer problems that underpins the elevated mental health risks in children with DLD (Forrest et al., 2021). Furthermore, stakeholder consultation has highlighted social outcomes and social inclusion as clinical research priorities (The Royal College of Speech and Language Therapists, 2020). Therefore, it is essential that researchers and clinicians have a good understanding of peer relations in this population so that effective supports can be developed.

The present paper aims to summarise the literature on peer relations[1] in children with DLD in a way that centres the children themselves. In doing so we hope to provide new insights and understanding of this important topic. We focus on clinically identified samples in order to

draw insights of relevance to clinical practice. We aim to summarise research that uses a participatory approach. Inspired by the metaphoric Ladder of Citizen's Participation (Arnstein, 1969) and its adaptation, the Ladder of Children's Participation (Hart, 1992), in the present paper we consider child-centred methods used to elicit children's voice (Figure 4.1).

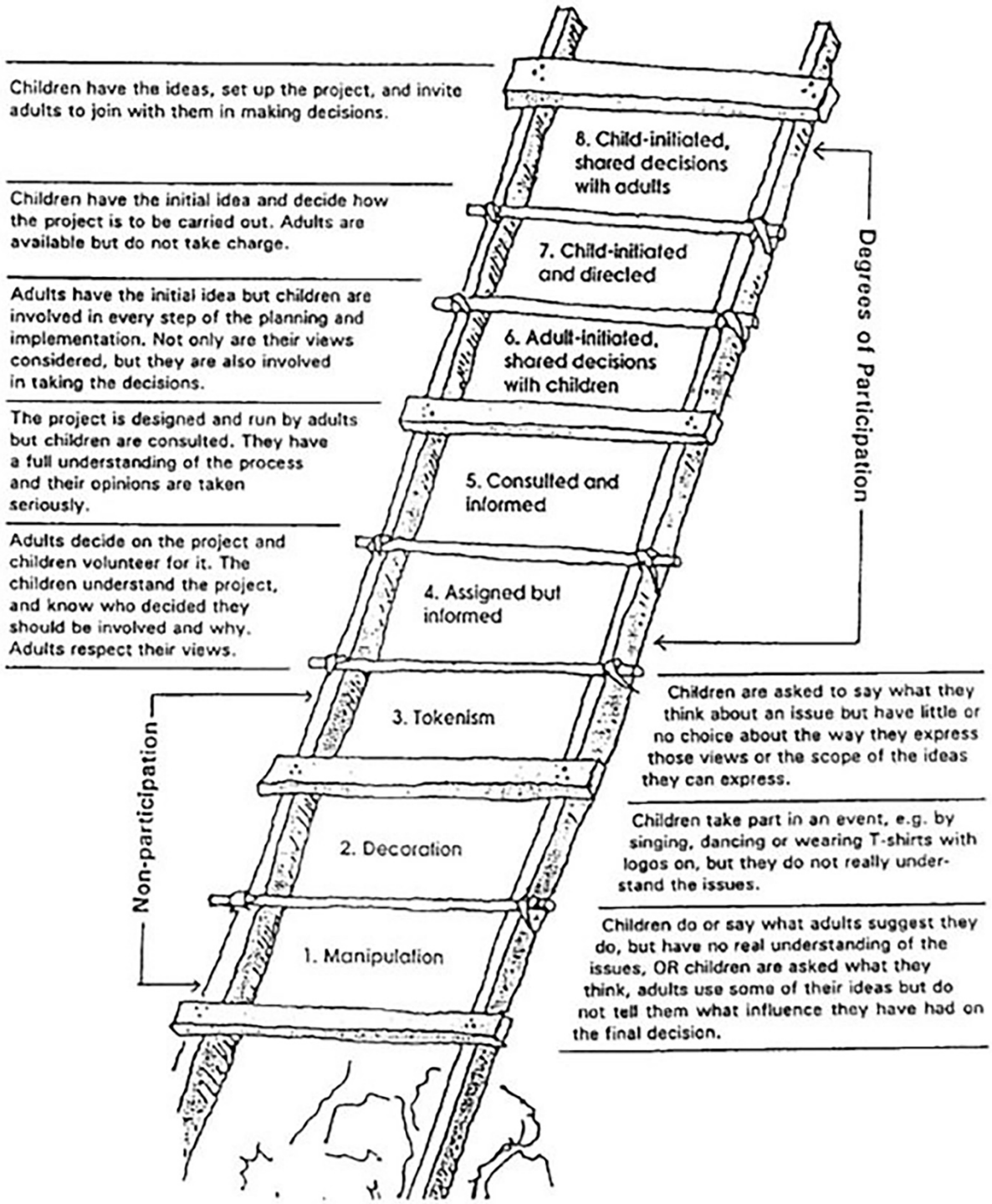


Figure 4.1 Ladder of children's participation (Hart, 1992, p.25)

We consider research that directly involves children with DLD to increase the likelihood of producing findings relevant to their everyday lives. In order to understand the peer relations

of children with DLD, consulting children directly is of the utmost ethical importance (Lyons & McAllister, 2019; Merrick, 2014). Such an approach may help to capture what is most important to children, without introducing high levels of adult bias (Hardman, 1974; James & Prout, 1989), and may help shed a unique light on some of the underspecified aspects of the models used to study the phenomena.

Of course, this brings its own challenges; children may not be mature enough to self-reflect or have limited insights. Adult views can be helpful too, especially, when they observe children in many contexts and may act as advocates. Nevertheless, children's participation is a fundamental human right, especially protected for those with disabilities (Groundwater-Smith et al., 2015; UN General Assembly, 1989; UNESCO, 1994), and participatory approaches are increasingly advocated for in research on neurodevelopmental conditions like autism and DLD (Lyons & Roulstone, 2018; Pellicano & Stears, 2011; The Royal College of Speech and Language Therapists, 2020).

The understanding that children, including those with disabilities, are competent in expressing their views has been translated into empirical research (e.g. Jenkin et al., 2015). In education, the unique insights and experiences of children with special education needs, including, learning difficulties, autism, cerebral palsy and Down's syndrome have actively contributed to improved inclusive education settings (Cakir & Korkmaz, 2019; Goodall, 2019; Lewis et al., 2007; Porter & Lacey, 2005). Participatory studies with children with DLD revealed children's perceptions of themselves, their skills and quality of life (Markham et al., 2009; Merrick & Roulstone, 2011). In these studies, researchers used drawings, photographs, scrapbooks and picture-card games to set a less verbal-focused atmosphere during interviews. Eliminating further barriers, especially the child participant – adult researcher power imbalance, is fundamental for establishing supportive and engaging research relationships. Various guidelines provide recommendations for good practice in research with vulnerable children, for example, by encouraging researchers to continue confirming participants' assent throughout the study, to build relationships with participants over time, to make questioning styles appropriate, or to consider using cue cards to support participants' narratives (e.g. Lewis & Porter, 2004). Furthermore, scholars (e.g. Aldridge, 2015; Janik Blaskova et al., 2020; Merrick, 2014) share additional practical learnings from engaging with children in studies, demonstrating that children, including those with DLD, can actively participate in research and make their views known.

4.2 The present study

This review aims to explore how research directly involving children with DLD can inform our understanding of peer relations in this group, and how research insights may change according to the nature of their involvement in the studies. We further examine how these findings might shape current theoretical understandings of the links between language impairment and peer relations, using the SAM as a framework to do so.

We address the following research questions:

1. To what extent have existing studies used genuinely participatory methods when researching the peer relations of children with DLD?
2. What examples of good practice in participatory research can be found in the research literature on DLD and peer relations?
3. Do different insights arise from different methods of child involvement in research, when considering links between language and peer relations in children with DLD *within the SAM framework*?

Addressing these questions will enable us to appraise to what extent the field of DLD research is meeting its obligations to conduct genuinely participatory research with those affected by the condition, and to further understanding of whether priorities and concerns raised in more traditional research paradigms align with those raised by more participatory designs.

4.3 Methods

4.3.1 Community engagement and ethics

Participants with DLD were not directly involved in carrying out this review however the topic of friendships and focus on participatory methods came about after discussions about research priorities with children (aged 6–11years), teachers and speech language therapists at a local language unit, and with parents at an open day.

Institutional ethical review and approval was granted for this study as part of the first author's doctoral studies.

4.3.2 Review methodology

To address the research questions, we carried out an integrative review of qualitative, quantitative, and mixed methods studies to include all types of peer relations studies with children with DLD (Evans, 2007; Grant & Booth, 2009). Omitting the quality assessment step, we followed a systematized review approach, adopting the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Grant & Booth, 2009). We applied the following methods.

4.3.2.1 Search terms

Non-peer reviewed publications (books, doctoral theses, government reports) and peer-reviewed articles were collected using a combination of literature search strategies, including database searches of terms and citations of Redmond and Rice (1998) in Scopus. The qualitative 'PICo' Framework (Stern et al., 2014) was used to identify keywords for the search; **P**opulation = Children with Developmental Language Disorder, phenomenon of **I**nterest = peer relations, **Co**ntext = research studies directly including children (See Appendix A for search terms).

4.3.2.2 Database searches

The search terms were used to search the following databases in April and May 2020:

- British Education Index
- Child Development & Adolescent Studies
- APA PsychInfo
- ERIC
- PubMed
- Scopus
- Web of Science.

4.3.2.3 Screening and eligibility assessment

Records from the search were imported into EndNote, deduplicated then screened for relevance using title and abstract, with the remaining articles being screened for eligibility against the PICo criteria and the following inclusion and exclusion criteria:

Inclusion criteria:

- Empirical study, qualitative, quantitative or mixed-methods
- Children with Developmental Language Disorder
- Children aged 4–12 years
- Measures peer relations
- Available in English
- Methods include direct engagement with, or observation of children
- Published any time up until 25 May 2020

We target children at the age of 4–12 years as this is a period of major social-cognitive developments in relation to self and others (Erikson, 1959; Selman, 1980).

We included any study that directly involved children in the research methodology in any way. We considered this to be the most effective way of gaining an overview of the relevant literature and of obtaining a perspective on different degrees and methods of children's participation in research – from research participation through to co-production.

Exclusion criteria:

- Theoretical studies
- Review/meta-analysis
- Language disorder is not primary focus
- Focus on phonological difficulties, speech sound disorder
- Study only engages with children for verbal or nonverbal IQ assessment

4.3.2.4 Synthesis and analysis

We analysed the selected publications in three steps.

Firstly, we read through the articles and developed a way to categorise them.

Secondly, we synthesised the research evidence within each category using narrative synthesis (Popay et al., 2006; Ryan, 2013) and integrated findings from studies addressing a range of questions, using different designs, where meta-analysis is not feasible (Ryan, 2013). Following this text-based approach, we summarised and explained findings from the reviewed studies (Popay et al., 2006) and highlighted salient points relevant to participatory approaches.

Finally, we extended the narrative synthesis beyond within category findings to look for themes and patterns across the category groups.

4.4 Results

4.4.1 Screening and eligibility assessment

All retrieved publications ($n = 15{,}977$) were initially screened through database filters to exclude records not available in English or targeting populations outside of the 4–12 age group. The remaining records ($n = 6{,}513$) were reviewed in the steps outlined in the PRISMA chart in Figure 4.2. Fifty-two articles (Appendix C) were selected for further analysis.

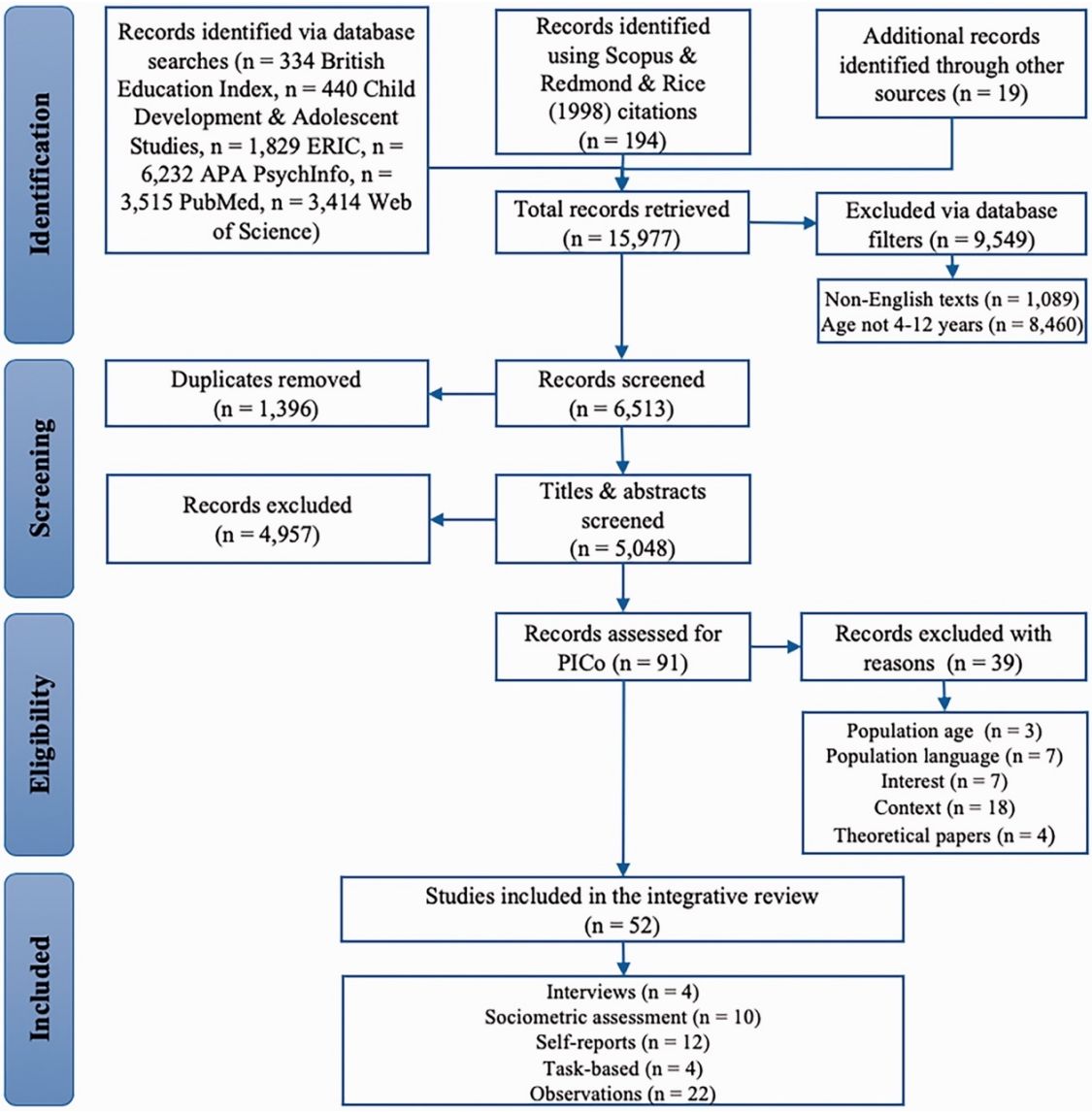


Figure 4.2 Study selection flow diagram

The flow diagram template was adopted from the PRISMA statement (Moher et al., 2009).

4.4.2 Categorisation of studies

In this first analytical step, we grouped the articles ($n = 52$) into categories according to study methods:

Interview ($n = 4$). These studies involve direct, 1:1 or focus group consultation with children.

Sociometric ($n = 10$). These studies seek information from both children with DLD and their peers to inform about their mutual relations. Typically, sociometric studies may ask children to nominate their preferred playmates or to identify the most and least popular children in their class.

Self-report ($n = 12$). These studies ask children to complete questionnaires to assess their subjective experiences.

Individual task-based ($n = 4$). These studies ask children to complete short tasks designed to evaluate competence in different areas, for example Theory of Mind.

Naturalistic observation ($n = 12$). These studies use observational methods such as video recording and annotation to collect data on children's use of language and behaviours in naturalistic settings.

Staged observation ($n = 10$). These studies also observe language use and behaviours of children, but in researcher set-up rather than naturalistic groups.

For articles where multiple methods are used, a study is listed in the category that includes the more active participation of children or peer relations.

4.4.3 Within-category narrative synthesis

Aligning with methodological strategies, each of the categories examine specific constructs, e.g. social cognition in task-based studies, behaviours in observations. We are inclusive of all investigated constructs, as we aim to synthesise findings from all peer relations studies involving children with DLD, without limiting ourselves to specific constructs. All constructs speak to the SAM.

We also sought and recorded examples of good practices concerning children's participation within each study type. While we did not have a specific list of practices in mind when selecting examples, we looked for indicators that children's participation had been considered and facilitated. Inspired by other research on children's participation, we predicted this might include activities such as gaining informed assent, using a multi-modal approach to

communication, adapting to specific communication needs and preferences and community involvement in the research agenda.

4.4.3.1 Interview studies

We identified four studies involving children in interviews. The study designs used variations of focus group interviews (Markham et al., 2009), workshops (Roulstone & Lindsay, 2012) and multiple one-to-one interviews (Lyons & Roulstone, 2017; Merrick & Roulstone, 2011). Three interview-based studies were peer reviewed published articles (Lyons & Roulstone, 2018; Markham et al., 2009; Merrick & Roulstone, 2011) and one was a governmental report (Roulstone et al., 2012). We find it encouraging that every interview-based paper referred to the United Nations Convention on the Rights of the Child (UN CRC; UN General Assembly, 1989) and recognised the need for a more active voice of children with DLD.

Regarding children's participation in research, we deem all interview-based studies reviewed here as achieving some degree of true participation. Roulstone and Lindsay (2012) explicitly noted that the research findings would be built in the services and thus enhance the delivery outcomes for children with DLD, achieving 'Consulted and informed' participation stage (Hart, 1992). We consider the participatory designs of the remaining three studies (Lyons & Roulstone, 2018; Markham et al., 2009; Merrick & Roulstone, 2011) as seeking further knowledge about the views and experiences of children with DLD, without an immediate clinical application. However, because of the open-ended and flexible format of the interview process, we would place these studies above pure tokenism.

Illustrating good practice in engaging children in research, all studies involved different art-based activities, from drawings (Roulstone & Lindsay, 2012), taking photographs and compiling a scrapbook (Merrick & Roulstone, 2011), using personal photographs as prompts (Lyons & Roulstone, 2018), to playing a picture-card game (Markham et al., 2009). Studies reported using semi-structured interviews adjusted to children's age and needs – e.g. the use of visual aids or shorter interview time with younger children. One study complemented interviews with additional wellbeing data from children's self-reports and parent questionnaires (Hart, 1992; Roulstone & Lindsay, 2012).

With respect to the Social Adaptation Model (SAM), this group of studies gives insight into which aspects of social adaptation matter from the child's perspective. In every interview-based study, children with DLD confirmed that peers play a crucial role in their daily experiences and quality of life. Concerns about being socially accepted or bullied were also

common. On the positive side, all four studies report that children with DLD perceive their friends as active agents, who can help make their lives easier. Involving different age groups reflected the developmental perspectives on children's peer relations (Markham et al., 2009). The younger ones appreciated having someone to play with, while older children looked for deeper connections (Markham et al., 2009).

Further peer-related concerns uncovered were that children with DLD often did not know what to talk about with their classmates, who, in return, did not always include them in the conversations of the wider group (Lyons & Roulstone, 2018; Roulstone & Lindsay, 2012). Children with DLD could feel excluded as a result (Merrick & Roulstone, 2011; Roulstone & Lindsay, 2012). In school, they could also feel singled out when receiving extra support or after returning from their special language classes (Lyons & Roulstone, 2018). Thus, the reported interview studies suggest that both limited language and relevant school provisions could make children with DLD feel isolated from their peers.

Interviews revealed further examples of emotional experiences that we see as positioning subjective wellbeing as a link between language and peer relations. Sometimes, children with DLD found it annoying if they needed to keep repeating themselves or corrected their speech when talking to their friends (Lyons & Roulstone, 2017; Markham et al., 2009). In other cases, they could be misunderstood and teased because of their limited language (Markham et al., 2009). A few of the interviewed children with DLD were aware of that not all friends are the same and some – true friends – have better friendship qualities than others and do not focus on speech/language difficulties (Lyons & Roulstone, 2018; Merrick & Roulstone, 2011). True friends could even protect children with DLD by letting other children know about their speaking difficulties (Merrick & Roulstone, 2011). To us, perceiving interpersonal qualities in others and distinguishing between true friends and acquaintances denote theory of mind and emotion awareness abilities as guiding the behaviour of children with DLD.

4.4.3.2 Sociometric studies

Sociometric studies seek children's views on the social structure of their peer group by asking them to nominate the most- and least-preferred playmates. From the participatory research perspective, the 10 identified studies used sociometric and friendship measures in rather tokenistic or maybe even decorative ways (Hart, 1992). The difference between tokenism and decoration was, however, hard to judge based on the information given. No

study reported active child participation as a particular aim or reported if there was any stakeholder involvement in the research design.

Perhaps the study keeping with the most participatory research ideas was that of Schneider (2009), who introduced an interview element, asking children about the reason behind their nominations. We perceive this approach as giving children a bigger scope to express their ideas. This strategy aligned with the tokenistic approach to engaging children in projects as described by Hart (1992).

In terms of good practice followed in the sociometric studies analysed, only Schneider (2009) specified that verbal assent was sought from children. For the remaining studies, it was not clear whether children were informed about the research and gave their assent. All studies in this category reported using child-friendly methods that do not rely heavily on language and communication abilities. Examples of good practice involved reading classmates' names aloud and using visual supports such as photographs and emojis for the rating scales (Fujiki et al., 1996; Guralnick et al., 1996a; McCabe & Meller, 2004; Schneider, 2009).

The general findings of identified sociometric and friendship nomination studies confirmed that children with DLD are at risk of poorer peer relations, although there were some exceptions. Four comparative studies found that children with DLD received more disliked nominations in comparison to their TD classmates (Andres-Roqueta et al., 2016; Gertner et al., 1994; Laws et al., 2012; Schneider, 2009). Another group comparison study showed that children with DLD report significantly less contacts with peers than their age-matched classmates (Fujiki et al., 1996a). On the other hand, McCabe and Meller (2004) found no differences in either peer nominations or mutual friendships. However, it is important to note that their methodology meant that children with DLD could rate only their classroom peers with DLD and the TD children rated only their TD peers. Guralnick et al. (1996a) found that peer acceptance measured by nomination was not significantly different between children with communication disorder and their peers within small groups. Nevertheless, complementary observations showed that children with communication disorders were less integrated (Guralnick et al., 1996a). We consider the reported studies' findings as indicating that sociometric assessment is sensitive to the levels of children being acquainted with each other or that individual differences result in some children with DLD being equally accepted as their TD peers.

Similar inferences could be made from a longitudinal assessment of changes in peer acceptance. Investigating the change in placement arrangements, Laws et al. (2012) found that children with DLD received significantly fewer negative ratings from their classmates and their positive ratings did not change significantly, after they moved from a specialist language base to a mainstream classroom. However, improvements were shown at individual levels with three out of four children with DLD receiving more positive and fewer negative peer nominations (Laws et al., 2012). This trend could result from changes in the classmates' perspectives as children get to spend more time together or due to natural developmental changes leading to an increased tolerance in children (Laws et al., 2012). Despite one unsuccessful case, the prevailing decrease in negative peer ratings gives a positive outlook for how children with DLD are perceived by their peers with time.

Diving into the mechanisms influencing the nominations of children with DLD, some studies complemented sociometrics with adult reports. Two of these suggested no link between language ability and the likeability and friendships of children with DLD (Andres-Roqueta et al., 2016; Fujiki et al., 2013). However, a study using *direct* measures found positive nominations significantly linked with expressive, receptive and articulation abilities while negative nominations were associated with poor articulation (Gertner et al., 1994). Similarly, Schneider (2009) found positive associations between language and sociometric status in preschool-aged children, whose language score accounted for 33% of the variance in social status. By fifth grade, the language – social status link was not significant, suggesting language might play smaller role in children's friendships as they grow older (Schneider, 2009). In eighth grade, the relationship was substantial, with language accounting for 7% of the variance in social status (Schneider, 2009). When testing for the unique contribution of language towards social status, regression analysis confirmed the importance of language over age, race, gender, socioeconomic status and the number of years attending the school in pre-schoolers and eighth graders (Schneider, 2009). This study varied importance of language in social status among different age groups, implying that different within-child factors may be more important at different points in development.

Analysing the qualitive component, Schneider (2009) grouped all reasons for positive and negative nominations into categories and calculated category percentages for each age and language group. In preschool, play/companionship (playing together, sitting and talking together) led the reasons for positive nomination for both children with DLD and their TD peers, receiving 60% and 50% of positive comments respectively (Schneider, 2009). In fifth

grade, play/companionship again led as reasons for positive nomination (45% of positive comments) but while children with DLD received more than double the percentage of comments on validation/caring, their TD peers were more likely to have long-standing friendships (Schneider, 2009). In negative peer nominations, the most often mentioned characteristics justifying the pre-schoolers' choices were disruptive behaviour for children with DLD and play/companionship (doesn't play with me, doesn't talk to me) for their TD peers (Schneider, 2009).

We interpret the imbalance in peer nominations among children with DLD and their TD peers as suggesting differences in social understanding. Children with DLD tended to give significantly more positive responses and less negative or neutral nominations to their mainstream classmates (Laws et al., 2012), indicating to us a potential positivity bias of children with DLD towards their classmates. In an intervention study, nominated best friends gave the lowest ratings to children with DLD who nominated them (Fujiki et al., 1999a). This could mean that children with DLD may not fully grasp the nature of friendship quality (Fujiki et al., 1999a). In our view, the misalignment of peer nominations among the groups could reflect differences in peer perceptions.

To summarize, peer and friendship nomination studies provide some insights into the links between linguistic development and peer relations outcomes. Peer nominations confirm that children with DLD are less accepted, particularly in early years of schooling. Language and communication intervention may not bring about positive changes in peer nominations, suggesting other influences upon friendships. The positively biased way children with DLD nominate their peers, the misalignment in their friendship nominations as well as social cognition tasks suggest that understanding others and perceiving peers as friends could significantly contribute to their social relationships.

4.4.3.3 Self-report questionnaires

Twelve articles used self-report questionnaires as the main tool for collecting data from children with DLD. Most of the identified studies compared the scores of children with DLD to their TD peers' scores (Arkkila et al., 2011; Marton et al., 2005; Nicola & Watter, 2018) or to the scores of children with different language or behavioural difficulties (Gough Kenyon et al., 2020; Lindsay et al., 2008; Redmond, 2011). Several longitudinal studies examined the developmental trends of children with DLD (McCormack et al., 2011; van den Bedem et al., 2018, 2019), in different school settings (Conti-Ramsden & Botting, 2004), or compared

different age groups of children with DLD (Jerome et al., 2002). Studies were based in several countries, including Australia, Finland, Netherlands, UK and the United States.

Although the locations and designs of studies varied, they shared similar approaches towards participatory research methods with children and learned about children's own perceptions and experiences through self-reports. A few studies reported getting assents from children to participate (Gough Kenyon et al., 2020; Nicola & Watter, 2015, 2018), which corresponds with the 'Assigned but informed' rung of the Hart's (1992) ladder. Arkkila et al. (2011) gained written consent from eight- to eleven-year-old children, as well as from their parents. These children were older than some children in other studies and thus more likely to understand a written consent form and be able to sign their names. In terms of adult consents, only two other studies mentioned seeking one from teachers or parents of participating children (Lindsay et al., 2008; McCormack et al., 2011). Nevertheless, Gough Kenyon et al. (2020) and McCormack et al. (2011) advocated for the children's views to be included in our efforts to understand their experiences and with this regard, also referred to the United Nations Convention on the Rights of the Child (UN General Assembly, 1989).

As examples of good practice, researchers described some of the ways that they had adjusted their methods to support children and particularly children with DLD. Using pictorial scales, simplified and locally-adapted language (e.g. changing 'smart' to 'clever'), colour coding, illustrations, or reading aloud questions were some examples (e.g. Jerome et al., 2002; Lindsay et al., 2008; Marton et al., 2005; van den Bedem 2018). Further, Nicola and Watter (2015, 2018) asked parents and teachers to stay nearby and provide communication support in case the participating children in their study struggled to understand the questionnaire. In summary, researchers using self-reports typically did not explicitly acknowledge the importance of gaining children's insights about matters that impact their lives; however, they focused their studies upon the life experiences of children, involved children directly, and adjusted research methods accordingly.

Self-report studies investigated the children's self-perceptions of quality of life, health, academic achievement, self-esteem and relationships. In the context of peer relations, pragmatic language abilities emerged as an important factor in the reviewed studies. Compared to TD peers, children with DLD scored lower in conflict resolution and negotiation scenarios, requiring appropriate use of language in complex contextual circumstances (Marton et al., 2005). Children with DLD could have misinterpreted

communicative intentions and reacted with socially inaccurate verbal and nonverbal responses (Marton et al., 2005).

Emotional experiences and understanding were other psychosocial attributes explored via self-reports on victimisation and bullying. In terms of receptive language abilities, children with DLD in Redmond's (2011) and van den Bedem's et al. (2018) studies had higher reports of physical and verbal victimisation associated with stronger language comprehension abilities. We link these findings with the potential lack of insights into peer relations as mentioned above – children with poorer abilities may misinterpret behaviour intended to victimise them.

Children with DLD also reported a significantly higher number of bullying incidents compared to their TD peers (McCormack et al., 2011). A positive learning is that the developmental trends in children with DLD and their TD peers showed decrease in reported victimisation in both groups (van den Bedem et al., 2018). Decreasing victimisation as well as bullying seemed to be linked with increased understanding of children's own emotions (van den Bedem et al., 2018). Higher and increasing sadness and fear appeared to explain more strongly perceived victimisation, while elevated and increasing levels of anger contributed towards children's own bullying behaviours (van den Bedem et al., 2018). While these relations were observed equally in children with DLD and their peers, understanding emotions had greater effect on lower victimisation in children with DLD than their peers (van den Bedem et al., 2018). Therefore, we suggest that interventions with children with DLD may need to target advanced emotion recognition abilities alongside language skills. We believe that developing more complex social cognition skills could help improve peer interactions and tackle the elevated levels of perceived victimisation in children with DLD.

Self-perceptions and evaluations of the quality of life by children with DLD gave important insights about their internal world. Children with DLD saw themselves as having significantly lower academic competence (Jerome et al., 2002), which tended to be their biggest concern for the transition to secondary schools (Gough Kenyon et al., 2020). On the contrary, social competence was what concerned most their TD peers when moving onto secondary school (Gough Kenyon et al., 2020). Still, as evident in the previous categories, children with DLD believed that they had low social abilities (Lindsay et al., 2008; Marton et al., 2005) and were less accepted by their peers (Jerome et al., 2002). The low social self-perception is backed up by the social functioning reports, where children scored themselves much lower than their parents, whose reports on children's social functioning were already

low (Nicola & Watter, 2015). When reporting on their quality of life, children with DLD scored their physical functioning much lower than was the population average (Nicola & Watter, 2015).

Despite the negative self-reports, children with DLD were interested in having positive relations with their peers in school (Lindsay et al., 2008) and their prosocial motivation was linked with better quality of their friendships (van den Bedem et al., 2019). At the same time, children with DLD reported that it is less easy for them to make friends in comparison to their TD peers (McCormack et al., 2011). Interestingly though, having more friends did not seem to have decreased the bullying experiences in children with DLD (Redmond, 2011). We theorise that perhaps friendship quality and not quantity could improve the experiences of peer interactions in children with DLD. Van den Bedem et al. (2019) partially explored this relationship when investigating the links between friendship quality and aspects of empathy to learn that indeed, higher quality of friendships contributed to cognitive empathy, prosocial motivation and affective empathy. As the importance of good friends has been proven via empathy self-reports, we can see it feeding into social cognition as an important psychosocial attribute for positive experiences in peer interactions of children with DLD. Identifying specific areas, in which good friends contribute to how children with DLD appreciate friendships could improve their peer experiences not only in school but also in the broader contexts of children's lives.

4.4.3.4 Task-based studies

The four studies using task-based measures assessed theory of mind, emotion awareness, conflict resolution strategies or metalinguistic problem solving, alongside verbal and nonverbal abilities (Bakopoulou & Dockrell, 2016; Farmer, 2000; Meline & Brackin, 1987; Timler, 2008). In addition to age and language matching to TD peer groups, one study included two groups of children with DLD – one from a special school and another from a language unit adjacent to a mainstream school (Bakopoulou & Dockrell, 2016). In addition to tasks designed for children, two studies collected data about children's socioemotional functioning via teacher-report and/or parent-report (Bakopoulou & Dockrell, 2016; Farmer, 2000; Timler, 2008).

Considering the extent of genuinely participatory methods used in the reported task-based studies, the task-based measures pre-determined the levels of children's active involvement. Children provided information for the study with a limited scope to present their opinions.

Although the tasks in the included studies cannot reveal children's perceptions and priorities, they are important to directly assessing children's abilities and needs. The studies' designs and methods justified the lower levels of children participation as specified by Hart (1992). To move up the Hart's (1992) ladder of participation, children could be considered as consultants when planning the study or interpreting its findings.

In terms of good practice, the information provided in studies did not recognise the active voice of children in research, children's participation, or child assent. This is not to say that the task-based studies did not follow child-centred and child-friendly approaches. Indeed, many of the tasks were highly visual, computer-supported or based on a story. Our reflection simply intends to acknowledge that children may need to be more explicitly recognised as informed participants in studies. Such an approach would strengthen the perceived position of children in research and perhaps encourage more frequent and active participation of children in studies.

The reviewed task-based studies demonstrate the links between language abilities and social cognition. The first study (Meline & Brackin, 1987) referred to this link as metalinguistic or metacommunicative problem solving and demonstrated that unlike age-matched peers, children with DLD less readily understood the problems caused for a listener by under-informativeness on the part of a speaker (Meline & Brackin, 1987). Relatedly, Farmer (2000) found that children with DLD are less accurate in attributing mental states and recognising sarcasm, jokes, lies, pretending or mixed emotions when compared to TD peers.

Studies report varied performance of children with DLD on social cognition tasks however. They had difficulties in recognising and inferring emotional reactions related to sadness, anger and fear (Bakopoulou & Dockrell, 2016). In a study testing first and second order theory of mind, children with DLD did *not* differ from their peers (Farmer, 2000). Similarly, in a conflict situation, both groups generated the same number of resolution strategies that were led by self-interest over relationship, though, children with DLD generated far fewer prosocial strategies (Timler, 2008). Task based studies also showed that children with DLD struggled with language-mediated conflict resolution, such as seeking clarification from peers (Bakopoulou & Dockrell, 2016). In summary, task-based studies link language and social cognition while directly engaging children with DLD.

4.4.3.5 Observation studies

We identified 22 studies drawing on observations of children with DLD. We split these into two categories: naturalistic ($n = 12$) and staged ($n = 10$) observations. Almost all naturalistic observations investigated the social functioning of children with DLD in the classroom or playroom. The social interaction behaviour and language of children with DLD were assessed with the focus on friendship formation (Guralnick et al., 1996b), play behaviours (Guralnick et al., 2006), conversation patterns (Hadley & Rice, 1991; Henton, 1998), conflict resolution (Horowitz et al., 2005, 2006, 2008) or general interactions (Fujiki et al., 2001; McCabe & Marshall, 2006; Rice et al., 1991). Two studies evaluated interventions aiming to enhance peer-group entry behaviours and initiations (Beilinson & Olswang, 2003; Schuele et al., 1995). The 'staged' studies observed situations deliberately setup by researchers to investigate cooperative behaviours (Brinton et al., 1998, 2000; Murphy et al., 2014; Musselwhite et al., 1980), group participation (Liiva & Cleave, 2005; Salmenlinna & Laakso, 2020), conflict resolution abilities (Stevens & Bliss, 1995) and paired interactions (DeKroon et al., 2002; Fey & Leonard, 1984; Robertson & Ellis Weismer, 1997). Both categories of observation studies sought to understand the peer interactions of children with DLD. Naturalistic observations revealed the broader context of socioemotional functioning for children with DLD and the inclusion tendencies of their peer groups. In contrast, the staged observations supported our understanding of a more intimate dynamics between interacting partners, capturing the details of their language and behaviours.

Observation studies do not require a child's active engagement, but they do allow the researcher a direct view of the child's world and experiences (Pellegrini, 2001). Similar to the previous category of task-based studies, we see an opportunity for observation designs to promote a genuine participation of children in research by consulting children about the study goals and methods at the planning stages or when interpreting findings.

Regarding the good practice of participatory studies with children, the reported observation studies did not specify these aspects of their research. In the naturalistic observation category, only Horowitz et al.'s (2005, 2006, 2008) mentioned obtaining informed consent from parents and children themselves. Perhaps the use of filming might have prompted researchers to report on this ethical aspect of the study. It is possible that the free-play observation design could have evoked an impression that practically, since no additional activities or behaviours were required from children, there was no need to inform children about the study. Some scholars may take the view that revealing details about the study could lead to an observer

paradox and participants' behaviours could change as result (Labov, 1972). For the staged observation studies, a few studies mentioned parental consent (e.g. Brinton et al., 2000; DeKroon et al., 2002; Murphy et al., 2014; Salmenlinna & Laakso, 2020) and just one referenced informed assents from children (Murphy et al., 2014).

Turning to discuss the studies' insights about links between language and peer relationships, the naturalistic observations investigated children's behaviour in different settings. Some studies targeted integrative settings, where children of different language abilities interact together (e.g. Beilinson & Olswang, 2003; Fujiki et al., 2001; Hadley & Rice, 1991; McCabe & Marshall, 2006; Schuele et al., 1995), and others focused on comparing groups of children with similar levels of language and communication (Henton, 1998; Horowitz et al., 2005, 2006, 2008). Guralnick and colleagues (Guralnick et al., 2006; Guralnick, Connor, et al., 1996; Guralnick, Gottman, et al., 1996; Guralnick & Hammond, 1999) conducted their research in both settings – mainstream or inclusive groups, as well as specialised groups of only children with similar developmental profiles. Four studies also explored how children with DLD interact with adults who are present in larger groups of children.

Observations of play behaviours of children with DLD revealed significant differences to their TD peers. Liiva and Cleave (2005) found that they spent significantly more time in solitary and onlooker play compared to peers. A similar trend, although not significant, was confirmed in a staged study that found children with DLD spent most of the time watching their TD peers and not participating in the activity (Brinton et al., 1998).

To investigate conflict resolution, sociodramatic play was used as a safe context. Although children with DLD were observed to enact a similar total number of resolution strategies as their TD peers in a hypothetical conflict scenario task, they generated fewer different types of strategies (Stevens & Bliss, 1995). Differences were noted in cooperative conflict resolutions that build on social cognition, and particularly perspective taking, persuasion, explaining, mutual decision-making, which are all language demanding skills (Stevens & Bliss, 1995).

In summary, observations of peer interactions revealed specific behaviours, social cognitive and linguistic abilities, essential for establishing successful peer relations of children with DLD.

4.5 Discussion

Overall, participatory approaches to research investigating the peer relations of children with DLD is limited in extent and represents an area where the field could improve. The most genuine participatory methods that eliminate the perceived power imbalance can be achieved through establishing a shared agenda, appropriate consenting process, accommodating children's needs and promoting their wellbeing throughout the study (Cornwall & Jewkes, 1995; Lewis & Porter, 2004). In practice, this could also mean acknowledging children's feelings (Merrick, 2014). Yet, we found little evidence of such approaches. Qualitative, interview-based studies were most likely to give children with DLD an active voice and to explicitly acknowledge the 'child participant' – 'adult researcher' power imbalance. Relating this back to Hart's ladder of child participation (Hart, 1992), these studies achieved the highest level in the present review. There is a potential to move up the Hart's (1992) ladder by consulting children about research goals, designs, methods, and interpretations of results, so that children take a more meaningful role in the studies aiming to understand and improve their lives.

Regardless of the extent of participatory methods, the reviewed studies demonstrated good practice in conducting research involving children with DLD. Throughout the studies there were some excellent examples of using visual supports or art-based approaches suited to the needs of children with communication disabilities (e.g. van den Bedem et al., 2019). Only a few studies, including interviews (e.g. Markham et al., 2009), sociometric studies (Schneider, 2009), self-reports (Arkkila et al., 2011; Gough Kenyon et al., 2020; Nicola & Watter, 2015) and staged observations (Murphy et al., 2014), reported seeking assent from children. The reviewed naturalistic observations and task-based studies do not report requesting informed assent from children. We conclude that chosen research method may play a role in the perceived importance of participatory considerations or reporting on this step in the study write up.

What can the field learn from these examples? We encourage all empirical researchers investigating the life-worlds of children with DLD to consider using and reporting on the following, 1) community or stakeholder involvement in research priorities and questions, 2) child-friendly information and consent/assent processes, including learning nonverbal behavioural cues for children less able to communicate using oral language, 3) use of multimodal communication and consideration of individual preferences for adjustments – examples drawn from the current review include use of art-based self-expression, visual

Likert-scales, and availability of sign-language or adult assistance in tasks/questionnaires. The recent priority setting partnership exercise carried out by the Royal College of Speech and Language Therapists (2020) gives a strong starting point for researchers wanting to know more. Furthermore, we recommend that where participatory approaches are not judged relevant/appropriate, reasons for this are given.

We now turn to address our final research question, which asks, Do different insights arise from different methods of child involvement in research, when considering links between language and peer relations in children with DLD, within the SAM framework? To recap, the SAM framework suggests that social challenges arise from a combination of the communicative demands of the environment, the verbal resources available to the child and the biases of others.

Studies using both tasks and sociometric data, show that results from direct language assessment are linked to children's social relationships, particularly in pre-schoolers (Andres-Roqueta et al., 2016; Fujiki et al., 2013; Gertner et al., 1994; Schneider, 2009). This contrasts with findings of a null-relation when adult reports are used (e.g. Mok et al., 2014). This implies that limited verbal resources do play a role, and that direct language assessments might be the best way of gaining more information relevant to children's social functioning.

Further, data from observations show that it is not the frequency or length of utterance that matter to peers, but rather the poor social use of language and low linguistic sophistication make a difference (DeKroon et al., 2002; Salmenlinna & Laksoo, 2020). These findings are backed up by self-reports, task-based and observation studies, confirming the breadth of vocabulary knowledge as minimally related to how successful children with DLD are at using language to reconcile peer conflict (Bakopoulou & Dockrell, 2016; Horowitz et al., 2005, 2008; Marton et al., 2005). It is important therefore that researchers acknowledge that in the context of the SAM, 'verbal resources' includes not only syntactic and semantic language but also social and linguistic pragmatics.

Secondly, the reviewed studies indicate subjective wellbeing and self-conceptualisation as important links between language abilities and social adjustment (e.g. Fujiki et al., 2001; Jerome et al., 2002; Lyons & Roulstone, 2018; Marton et al., 2005). The interview-based studies reveal children with DLD being aware of their limited language abilities and unsure about topics to bring up with their peers (Lyons & Roulstone, 2018; Merrick & Roulstone, 2011). The self-reports confirm this, and children with DLD report believing

themselves to have poor social abilities, and less peer acceptance, consequently they can feel isolated and physically or academically incompetent (Jerome et al., 2002; Lindsay et al., 2008; Nicola & Watter, 2015, 2018; Marton et al., 2005).

On the other hand, there are reports of positive self-perceptions (Roulstone et al., 2012) and prosocial tendencies have been confirmed by both self-reports and observations; children with DLD want to get on well with their peers (Lindsay et al., 2008; van den Bedem et al., 2019). Furthermore, their withdrawn play behaviours are revealed by observation as not passive/disinterested but rather shy and active (Fujiki et al., 2001). A reason for this variable self-concept may be that while children with DLD perform similarly to their TD peers in more straightforward assessments of social cognition, such as theory of mind tasks (Farmer, 2000), they perform poorly in more complex tasks of emotion recognition and prosocial conflict resolution skills (Bakopoulou & Dockrell, 2016; Timler, 2008). It could be the case that low self-perception and self-esteem, together with previous negative experiences, sabotage the way children with DLD make the most of their language abilities, theory of mind and emotion knowledge in social communication situations. Taken together, we suggest that self-perceptions are relevant to the SAM, in addition to the already present 'biases of others'. The implication here is that longer term impacts of social challenges may reduce the opportunities for social learning in children with DLD and, over time, there may be an impact on the psychosocial attributes that were assumed to be intact according to the initial version of the SAM.

4.5.1 Clinical implications

The findings suggest that interventions could potentially target pragmatic language skills as well as more traditional structural language skills in children with DLD, even where pragmatics may not be the initial presenting problem, as children seem to highlight *use* of language as most significantly impacting peer perceptions. This tallies with population level findings of pragmatics as a potential mediator of social difficulties (Law et al., 2015), and that structural language is a significant predictor of pragmatic language abilities (Frazier Norbury et al., 2017). It aligns with therapeutic approaches to pragmatic language impairments that include structural language development as intervention targets (Adams et al., 2012, 2015). To the best of the authors' knowledge and clinical experience, it is rare for interventions to target pragmatics unless difficulties are considered disproportionate to

underlying language skills and so this could be an interesting new direction for studies aimed at preventing negative social sequalae of language disorders.

Relatedly, children with DLD feel motivated to socialise yet not sufficiently equipped to succeed. Although they perform relatively well on the assessment of individual social cognition tasks, such as theory of mind and emotion identification, children with DLD find it difficult to apply these skills in context of peer interactions and particularly, in conflicts. Furthermore, unsuccessful interactions hold them back from trying. Studies engaging children show that the more actively children with DLD behave towards or in response to their peers, the more accepted they are, and so again this raises interesting routes for preventative interventions. Findings also suggest that self-concept may be a more important target than 'social skills' when it comes to supporting children with DLD in developing capacities for strong friendships. This is an interesting insight and could be tested via experimentally designed studies.

4.5.2 Strengths and limitations

Before drawing conclusions, we briefly outline the strengths and limitations of the present review. To the best of our knowledge, this integrative review is the first to emphasise the importance of a participatory approach when researching peer relations of children with DLD. Important strengths include a clear, replicable methodology, inclusion of qualitative and quantitative studies and a focus on child-voice. There are also some limitations to note. Firstly, the quality of included studies was not assessed meaning that there is no appraisal of the robustness of the evidence base. While this is common in systematised integrative reviews, it is important to keep this in mind when interpreting results. Secondly, due to resource constraints, abstracts were not double screened, and we could have missed out a study. There is no reported inter-rater reliability for the inclusion/exclusion decisions either. To compensate for this, the list of excluded studies is included in Appendix B. Finally, the speech and language difficulties targeted in the selected studies may not necessarily align with the definition of DLD by modern criteria (e.g. Bishop et al., 2016). However, a broad approach was taken in order to learn from previous studies that use different terminologies.

4.6 Conclusion

To conclude, the present review demonstrates that research on the peer relations of children with Developmental Language Disorder is in the early stages when it comes to taking a participatory approach. However, there are some examples of inclusive practice from which

the whole field can learn. The findings show that research that directly includes children with language disorders and takes account of their communication challenges can help build a more comprehensive knowledge of their world and leads to interesting avenues for interventions targeting social adjustment.

Results Part Two

Part two of the results contains the case summaries and subsequent analyses presented in the following three chapters:

Chapter 5 Case summaries

This chapter summarises the information about the participating children with DLD and provides a rich description of each child. To contribute to the first aim of the project, which is to identify within-child characteristics promoting children's peer relationships, this chapter considers children's language and communication, psychosocial attributes, and behaviours to highlight their key characteristics contributing to their peer relationships. In addition to adult reports and traditional research tools (e.g. sociometric methods, Raven's matrices), the chapter largely draws on my child-centred interactions with the children. My child-centred approach contributed to the second aim of the project - to identify methods facilitating the participation of children with DLD in research studies. I used visual supports, art-based tools, and flexibly adjusted my one-to-one meeting plans to facilitate children's participation in this project.

Chapter 6 Friendship concepts in children with DLD

This chapter examines the friendship concepts in children with DLD. In line with the first aim of the overall research project, children's understanding of friendship is investigated as a characteristic promoting their peer relationships. It assess how children describe a good/bad friend, why they want to make friends and what strategies they use for making friends. Using Selman's (1979) *Friendship formation* assessment tool contributes to the second aim of the project of identifying methods facilitating children's participation in studies about their peer relationships. The approach is used as an alternative to more traditional tools assessing children's social understanding (e.g. theory of mind tasks, emotion recognition tasks).

Chapter 7 Children with DLD as friends

This chapter identifies the within-child characteristics promoting the peer relationships of children with DLD, obtained from their friends. This complements the overall project enquiry by considering the perspectives of peers. The chapter informs about strategies that friends use

to overcome potential communication barriers in their interactions with children with DLD. Some of these strategies can be used to facilitate the participation of children with DLD in research studies and in their classrooms.

1. What are the within-child characteristics that promote the peer relationships of children with DLD?
2. What research methods facilitate the participation of children with DLD in studies about their peer relationships in school?

Chapter 5 Case summaries

This chapter presents the case summaries of participating children with Developmental Language Disorder (DLD). It builds on the important features of peer relationships identified in Chapter 4 and integrates them in an in-depth description of the social functioning of participating children with DLD. The current chapter stems from the underlying child-centred approach to the overall research project. This chapter captures the background data of each participating child and aims to support the reader to get to know the participating children in a level of detail that was not possible for the chapters formatted for academic publication.

5.1 My approach to summaries of case studies

The case study summaries give rich description about the participating children with DLD and highlight key aspects of their social functioning and interactions with peers. Each case starts with a table outlining the child's background based on parent and teacher questionnaires, sociometric data, language, and nonverbal IQ assessments. In each case, I further present a narrative summary, guided by the social adaptation model (SAM) of Redmond and Rice (1998), who outline possible links between language and behaviours of children with DLD. In alignment with the SAM, I interpret my observations of children's language, communication, psychosocial attributes, and behaviours. Some of these areas were more salient than others for individual children with DLD. Additionally, I briefly summarise children's peer interactions. The summaries are informed by my reflections from interacting with children with DLD and their classroom friends. Children's art and quotations complement the narratives and endorse the child-centred approach.

My interpretations are filtered through my guidance counselling background and child-centred focus. I am not a speech and language therapist, and so, I capture children's language and communication without this level of specialist knowledge. I observed the way children speak and report only noticeable speech impairments. I include quotations to illustrate children's language and interactions. The transcription convention (Appendix O) captures silence (.), smile ((@)), laugh ((@@)), heavy breathing ((Hx)), and raised voice in CAPITAL LETTERS to illustrate features of children's communication.

During the analytical process, I mapped data into tabular summaries of individual cases. I applied a number of theoretical frameworks:

- Redmond and Rice (1998) SAM model,
- Selman's (1979) conceptions of friendships (results presented in Chapter 6),
- Dunn et al. (2002) friendship quality (peer answers presented in Chapter7).

I use 'CH#' and 'CH#F' as identifiers of children with DLD and their friends, whom I interviewed. The # symbol is replaced with a number that I allocated to participants chronologically as they were joining the study. Children with DLD and their friends share the same number, and friends are distinguished by additional letter 'F.' I use pseudonyms when children refer to their peers who were not interviewed as part of this project.

In narrative summaries, I specify sources of data in italics. For example, *CH1F_Friendship* indicates that data comes from the Friendship interview with the friend of child 1.

5.1.1 Notes on the language and communication reports in case studies

In this section, I provide notes on tables reporting children's language and communication, and nonverbal IQ in each case summary. The actual assessment tools are described in Chapter 3 (3.4 Research procedures and tools) and Appendices E-I. The below information specifies the contents of the reporting tables to clarify interpretations and avoid duplicity of these details in each case summary. I present the notes in order of the information listed in table summaries.

CCC-2 (Bishop, 2003) notes

1. Scaled score is the norm referenced score in the UK.
2. All scales are scored so that a high scaled score or percentile indicates communicative strength.
3. GCC, the general communication composite, is sum of scaled scores for scales A to H, and is an index of overall communicative competence.
4. SIDC, the social-interaction deviance composite, is calculated by subtracting the sum of pragmatic and social interaction impairments (E+H+I+J) from the sum of subscale scores that tapped structural language (A+B+C+D).
5. A negative value for SIDC in combination with GCC below 55 indicates a communicative profile suggestive of an autistic spectrum disorder.

6. An SIDC of -15 or below is abnormal, even in a child with a GCC in the normal range.
7. An SIDC of 9 or more in a child with GCC below 55 indicates a communicative profile characteristic of Specific Language Impairment.
8. If Consistency Check is zero, this implies the data are not valid.

Raven's (2004) nonverbal IQ notes

1. Scaled scores are reported at 90% confidence level.
2. Standardised score refers to range bands, e.g. 105 is the range band 102.5<107.5.
3. Normative data is reported based on norms for Great Britain, including those attending Special Schools (Table CPM9, Smoothed, 1982).

ACE (Adams et al., 2001) notes

1. Subtest scaled scores are reported at 95% confidence level.
2. Subtest standard scores on each ACE 6-11 subtest have normal distribution with a mean of 10 and standard deviation 3.
3. Sentence Comprehension subtest normative data reported in Table 3 (age 7:0-7:11, pg.144) and Table 4 (age 8:0-8:11, Adams et al., pg. 151).
4. Naming subtest normative data reported Table 3 (age 7:0-7:11, pg.145) and Table 4 (age 8:0-8:11, Adams et al., pg. 152).

CELF4 (Semel et al., 2006) Sentence recall notes

1. Scaled scores are reported at 90% confidence level.
2. Klem et al. (2015) found no support that sentence recall measures have an individual memory component that would have a causal impact on language development.

Next, the prevalent themes within and across cases are presented.

5.2 Case studies reports

I start with summarising the background information about children in Table 5.1.

Table 5.1 Participants' characteristics

Child ID	Gender	Age in years	Yrs since arrival to the UK/ROI	Languages in order most spoken at home	Ravens Standardised	CCC-2 GCC[1] Scaled score	CCC-2 SIDC[2] Scaled score	School settings
CH1	M	8.42	8	Hungarian, English	125	35	17	EP[3]
CH2	M	7.86		English	125	46	9	EP
CH3	M	7.23		English	95	27	15	EP
CH4	M	8.9		English, Polish	80	43	17	MC[4]
CH5	F	7.97	6	Polish, English	115	48	9	SSLD[5]
CH6	M	7.77		English, Krio	105	42	13	SSLD
CH7	F	6.99		English, Tagalog	125	52	17	SSLD
CH8	M	7.47		English	80	45	-7	SSLD
CH9	M	7.15		English, Bengali	90	54	13	SSLD
CH10	F	8		English	70	29	0	MC
CH11	F	8.78		English	<60	30	18	MC
CH12	F	7.94		English	95	29	13	MC
CH13	F	8.75		English	75	42	11	MC
CH14	F	7.17		English	60	36	-1	MC

[1] *General Communication Composite*
[2] *Social Interaction Deviance Composite*
[3] *Enhanced Provision*
[4] *Mainstream class*
[5] *Specific Speech & Language Disorder Class*

Next, I summarise children's sociometric data and school settings in Table 5.2.

Table 5.2 Sociometric details of children with DLD

Child ID	Gender	Age years	School settings	[1]Social status	[2]Social preference	[3]Social impact	Reciprocal friends	Nominated as a friend
CH1	M	8.42	EP	Neglected	Rejected	Neglected	0	0
CH2	M	7.86	EP	Neglected	Average	Neglected	1	1
CH3	M	7.23	EP	Rejected	Rejected	Average	0	0
CH4	M	8.9	MC	Average	Popular	Neglected	3	4
CH5	F	7.97	SSLDC	Popular	Popular	Controversial	3	5
CH6	M	7.77	SSLDC	Neglected	Popular	Neglected	0	0
CH7	F	6.99	SSLDC	Popular	Popular	Controversial	1	4
CH8	M	7.47	SSLDC	Controversial	Popular	Controversial	1	2
CH9	M	7.15	SSLDC	Average	Popular	Average	1	4
CH10	F	8	MC	Average	Average	Average	3	3
CH11	F	8.78	MC	Rejected	Rejected	Controversial	1	1
CH12	F	7.94	MC	Popular	Popular	Controversial	2	4
CH13	F	8.75	MC	Rejected	Rejected	Controversial	1	1
CH14	F	7.17	MC	Average	Rejected	Neglected	1	2

[1] *Social status - combination of Social preference and Social impact scores*
[2] *Social preference - Liked Most minus Liked Least peer nominations*
[3] *Social impact - Liked Most plus Liked Least peer nominations*

The sociometric results varied, and there was no clear distinction observed across school settings. Therefore, I continued analysing children individually and not according to specific sociometric categories.

Case summaries of individual children with DLD and a cross-case summary follow next.

5.2.1 Child 1 case summary

The case summary of CH1 is presented in Table 5.3

Table 5.3 CH1 case summary

Child ID	**CH1**	School settings	Enhanced Provision
Gender	Male		
Age	8 yr 4 mo	Concurrent diagnosis	NA
No. of 1on1 meetings	5	Sociometric status	Neglected
No. of observations	3	Reciprocal friends	0
Art work produced by child	3	Nominated as a friend	0

SDQ scales ***Parent***	*raw score*	*4-band category*
prosocial	10	Close to average
peer problems	3	Slightly raised
emotional	0	Close to average
hyperactivity	6	Slightly raised
conduct	0	Close to average
Total difficulties	9	Close to average
Impact score	0	Close to average

SDQ scales ***Teacher***	*raw score*	*4-band category*
prosocial	7	Close to average
peer problems	3	Slightly raised
emotional	7	Very high
hyperactivity	6	Slightly raised
conduct	3	Slightly raised
Total difficulties	19	Very high
Impact score	4	Very high

CCC-2 scales ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	18	0	<1
B. syntax	18	0	<1
C. semantic	6	5	6
D. coherence	5	6	14
E. inappropriate initiation	3	10	60
F. stereotyped language	5	5	6
G. use of context	7	5	5
H. nonverbal	7	4	5
I. social relations	4	5	9
J. interests	4	9	50
General Communication Composite - GCC		35	2
Social Interaction Deviance Composite - SIDC		17	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	33	125	115-135	95	11 yr
Sentence Comprehension: ACE	17	4	0-8	2	
Naming: ACE	10	5	2-8	5	
Sentence Recall: CELF4	0	1	0-2	0.1	

Assessment observations

Ravens: *justified answers, pointing at the picture with the missing piece, no utterances*

Sentence Recall: *no interest at the start, started telling a hide & seek story, hardly verbal, answered 'yes' instead of repeating - laughed, tried to say 3rd sentence but hard to understand. Next assessment, child was fully cooperative & engaged*

5.2.2 CH1 narrative summary

CH1 was a boy in an Enhanced Provision class adjacent to mainstream primary school.

Language and communication

DLD was indicated by the combination of GCC (= 35 scaled) and low language battery scores. CH1's poor speech and syntax (CCC-2 score) was clearly noticeable in our interactions.

> ***R:*** *((@)) Moustache? ((child places the clay as if he wore a moustache))*
> ***CH1:*** *Muu-ta-ge*
> ***R****: Mmm-like that, okay ((@))*
> ***CH1****: Mu-ta ((moustache))*
> ***R:*** *((@)) funny*
> ***CH1:*** *Be-ea-wea*
> ***R:*** *Beard, yeah ((@)) well-done!*

CH1 was almost nonverbal, spoke slowly, and did not articulate clearly. The next example is from using the Merrick's (2009) illustrations in wellbeing interview.

> ***CH1:*** *(A-ppen-bay)*
> ***R:*** *Airplane, yeah.*
> ***CH1:*** *(Is how-tin)*
> ***R:*** *He is shouting, yes, he is.*

I was repeating almost everything CH1 said to ensure I understood him. His vocabulary was very limited.

> *When unsure the child tends to say 'don't know' or use gestures*
> 🤷‍♀️ *(CH1_DataCollectionNotes)*

The teacher believed that CH1 was "not motivated to talk" (CH1_ReflectiveJournal).

Psychosocial attributes

The child's performance in Ravens was among the top 3 of all participating children. CH1 did not pass 2nd order ToM but that could have related to the tasks being more language heavy. CH1 did well and engaged in specific tasks like counting and recognising colours. He tended to focus on these tasks, even when they were not specifically required. This might have been due to CH1 feeling confident doing them.

CH1 was the only one displaying friendship circles separately (Figure 5.1).

Figure 5.1 Circle of Friends by CH1

CH1 seemed to have some limitations in understanding social relationships. Relevant to trust, he did not seem to differentiate between their friends and other peers, and suspected even his friends of teasing him. As reported by CH1F, CH1 gets teased or ignored by classroom peers, and these experiences could have resulted in their lack of trust in friends.

Behaviours

CH1 was often disengaged in the mainstream afternoon class.

> *There is almost no eye contact and the child is turned towards the classroom, away from the whiteboard. (CH1_ObservationNotes)*

He appeared tired and rested his head on a desk a number of times.

> *Child 1 is asked to sit up by the teacher.*
> *Cave painting activity is introduced.*
> *Child 1 is asked to sit up again.*
> *Teacher asks question about what would they use if they had no brush?*
> *Child 1 lays down. (CH1_ObservationNotes)*

CH1 was prosocial, tried to interact with children in the classroom and in interview, he expressed the preference of playing with other children rather than on his own.

> ***R:*** *And do you like playing on your own or do you like playing with other children?*
> ***CH1:*** *Ou-chi-l-en*
> ***R:*** *Other children? (.)*
> ***CH1:*** *(.) ((counting LEGO pieces in the video clip))*
> *(CH1_ Retrospective_Interview)*

In the playground and when moving between classes, CH1 got more interaction responses from the teaching assistant than from peers.

CH1 sometimes acted silly to get attention from peers, but it was not clear whether CH1 understood that some behaviours might not be appropriate and could even make other

children feel bad, e.g. making ‘L’ sign on his forehead as if ‘loser’ when trying to interact with a peer in a classroom, in a silly manner.

Peer interactions

To play was the reason CH1 gave for having friends. Friends got upset when CH1 did not listen to and trusted them (*CH1F_Friendship*). Friends acted as protective to CH1’s wellbeing by telling off peers who were teasing CH1 or by telling the teacher. Friends invited CH1 to join their play when they saw CH1 on their own. The teacher sometimes asked peers to play with CH1.

5.2.3 Child 2 case summary

The case summary of CH2 is presented in Table 5.4

Table 5.4 CH2 case summary

Child ID	**CH2**	School settings	Enhanced Provision
Gender	Male		
Age	7 yr 9 mo	Concurrent diagnosis	NA
No. of 1on1 meetings	5	Sociometric status	Neglected
No. of observations	3	Reciprocal friends	1
Art work produced by child	3	Nominated as a friend	1

SDQ scales ***Parent***	*raw score*	*4-band category*
prosocial	8	Close to average
peer problems	4	High
emotional	3	Close to average
hyperactivity	4	Close to average
conduct	0	Close to average
Total difficulties	11	Close to average
Impact score	5	Very high

SDQ scales ***Teacher***	*raw score*	*4-band category*
prosocial	7	Close to average
peer problems	3	Slightly raised
emotional	4	Slightly raised
hyperactivity	6	Slightly raised
conduct	0	Close to average
Total difficulties	13	Slightly raised
Impact score	1	Slightly raised

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	11	1	<1
B. syntax	1	9	37
C. semantic	6	6	12
D. coherence	11	3	2
E. inappropriate initiation	4	9	49
F. stereotyped language	5	6	14
G. use of context	6	6	12
H. nonverbal	4	6	15
I. social relations	3	6	14
J. interests	7	7	20
General Communication Composite - GCC		46	6
Social Interaction Deviance Composite - SIDC		9	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	33	125	115-135	95	11 yr
Sentence Comprehension: ACE	25	11	8-14	63	
Naming: ACE	23	17	14-20	99	
Sentence Recall: CELF4	54	11	10-12	63	

Assessment observations

Ravens: *saying number of picture back (not pointing), turning pages by himself*

5.2.4 CH2 narrative summary

CH2 was a boy attending Enhanced Provision in the mornings and meeting with his mainstream classroom friends in the afternoons.

Language and communication

DLD was indicated by the combination of GCC (46 scaled), sentence comprehension (<63 percentile), and sentence recall (<63 percentile) scores. The child's speech difficulties could have been observed and stuttering seemed to me to be his primary communication difficulty.

> ***R:*** *Who is a good friend?*
> ***CH2:*** *(Hx, Hx, Hx, Hx-H) Oh yeah, I (Hx, Hx, Hx, Hx, Hx-H) when he is kind(::)*
> ***R:*** *Mhmmm*
> ***CH2:*** *(Hx, Hx) and helps you(::)*
> ***R:*** *Okay.*
> ***CH2:*** *Eergh, aand, and play with when (a) bored(::)*
>
> ***R:*** *And what does he help you with?*
> ***CH2:*** *(Hx, Hx-H, Hx-H) He helps me with (Hx-H, Hx, Hx) he helps with (Hx, Hx-H) ehm… (Hx, Hx, Hx-H, Hx, Hx-H) (Hx, Hx, Hx, Hx-H) (Hx, Hx, Hx, Hx,Hx-H) he helps with my work (::)*
> ***R:*** *Oh, with your work, okay. So how does he help you? (.) What does he do?*
> ***CH2:*** *When I'm stuck*
> ***R:*** *Mhmm, then he does what?*
> ***CH2:*** *(Hx) Then he helps me(::)*
> ***R:*** *Mhmm*
> ***CH2:*** *When I'm stuck(::)*
> ***R:*** *Mhmm*
> ***CH2:*** *In (my) work(::)*
> ***R:*** *It gets stuck and…*
> ***CH2:*** *(Hx, Hx-H) when I get stuck in my work (::)*
>
> *It takes time for the child to start speaking up*
> *He seems to have a little 'anxiety' to start – deep loud breath, sometimes accompanied with rocking front & back*
> *Very verbal when not pushed (I was really amazed)*
> *The boy gave proper and full justifications for 2nd ToM answers – 2-3 sentences long*
> *(CH2_DataCollectionNotes)*

Before speaking up, CH2 took a number of deep breaths but as soon as he uttered the first words, their speech was almost fluent. Heavy breathing could have evoked breathing difficulties to his communication partners.

Psychosocial attributes

CH2 scored at the 95th percentile in performance IQ assessment task. The boy did well on ToM and had good social understanding.

> *Seemed to find the [ToM] scenarios amusing (boy hiding chocolates and being seen by his friend), laughed and smirked (CH2_DataCollectionNotes)*

CH2 had good self-esteem. He asked to keep their art from our one-to-one meetings and walked around the school with confidence during the Guided school tour. CH2 revealed approaching peers if he wanted to play and make friends. In his own words, CH2 was fun because "*I[CH2] think of good games to play*." CH2 found making friends hard because he did not know if the person was fun.

Behaviours

CH2 was rather quiet but engaged in the classroom. He actively listened to the teacher and raised hands when the teacher asked open questions. His teacher and peers believed that CH2 was smart and clever and would have known the answer. Although CH2 did not get to be asked to answer often. Out of all participating children, CH2 drew the most sophisticated school map, capturing the entire school. His drawing (Figure 5.2) corroborated the high Raven's score.

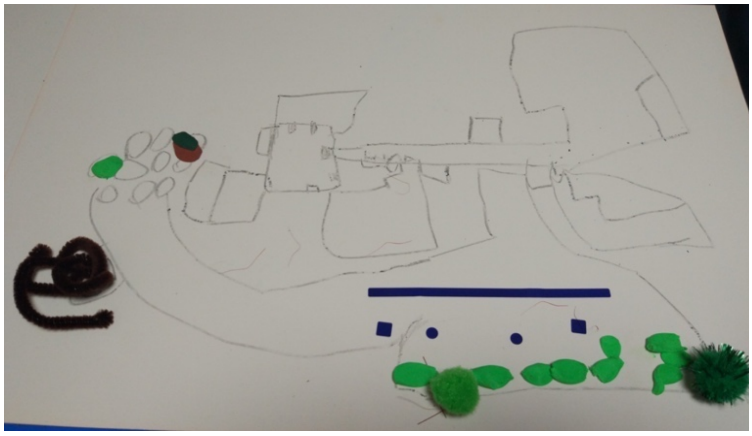


Figure 5.2 School map by CH2

CH2 appeared self-sufficient and ambitious in schoolwork. He preferred doing tasks alone.

> ***R:*** *Do you like working on your own or do you like working with other children?*
> ***CH2:*** *My own*
> ***R:*** *On your own, okay. So do you think you are a bit shy?*
> ***CH2:*** *No*
> ***R:*** *Okay (@) So why do you like working on your own?*

CH2: *((Hx, Hx, Hx, Hx, Hx)) Erm, ((Hx-H)) I (don) know ((Hx, Hx)) Because ((Hx, Hx, Hx, Hx)) Because then is best <xxxx> that I'm working with then, then, then, then they'll be bad, cause if I don't like them that I'm working with.*
R: *Mhmm. And can you choose someone that you, you can work with?*
CH2: *((Hx, Hx)) sometimes*
R: *Mhmm. And can you tell me a story about something when you, when you worked with somebody and you didn't like them?*
CH2: *((Hx, Hx, Hx, Hx-H)) Ehmm, I like get annoyed*
R: *You get annoyed*
CH2: *Yeah in PE I-I work with someone [and]*
R: *[Mhm]*
CH2: *((Hx, Hx-H)) And then get annoy-ed (.) Shh ((shooting sound))*
R: *Did you tell them? (@)*
CH2: *Erm, no*
R: *And what was annoying? What did, what was annoying about it?*
CH2: *((Hx, Hx-H)) I know! ((Hx, Hx, Hx, Hx-H, Hx)) (they're doing points) (.) They are doing points.*
R: *They were doing points?*
CH2: *Yeah, yes, yes, if you missed it then you've lost a life.*
R: *Oh I see, so they were not that good!*
CH2: *((Hx, Hx)) No! (.) No, no, they ma-, maybe, ma-making (years) so you has to do life and ehm, and then, and then, boring*
R: *Oh it was also boring, [okay]*
CH2: *[yeah]*
R: *Mhmm. (.) And so (.) do you usually work with the same, do you like working with the same children? Or..*
CH2: *Eerr, Oscar*
R: *Okay, so how is it when you work with them? With Oscar.*
CH2: *Er, fun.*
R: *Fun?*
CH2: *Yeah.*
R: *He is not annoying you*
CH2: *No.*
(CH2_Wellbeing)

In the above example, CH2 liked doing tasks with their friend from the Enhanced Provision who joins the same Mainstream class in the afternoon.

CH2 was prosocial and tended to play with his friends from Enhanced Provision; however, CH2 also hung out with 2-3 children from the mainstream classroom.

Peer interactions

CH2 was perceived as kind, nice and helpful, and peers liked working with him in a group. CH2 often finished tasks earlier than the rest of the class and reached out to others whether they need help.

CH2F revealed that CH2 might make jokes that other peers consider nasty, but CH2 would make up for that and say it was a joke. This was not observed in the class or confirmed by the teacher or teaching assistants.

> ***CH2F:*** *So, I saw <xxxx> him before, with his other friends and he done something wrong by accident and then I saw that he got upset and they didn't wanna play with him, so, he kept asking them, can I say sorry or try and fix this, so they let him and then, and then I saw them back together in no time. (CH2F_Friendship)*

A number of mainstream friends showed their inclusive mindset by letting CH2 choose the game and helping CH2 make other friends. Neither CH2 nor CH2F reported arguments or fall outs. CH2F could not tell why other peers did not play with CH2 – CH2F saw no difference between CH2 and other children.

CH2 seemed to have a good social understanding and would compensate for potential disputes (NOT SURE if due to language, behaviour, jokes) with apologising and helpful behaviours.

CH2 had a good self-esteem and were happy to be on their own. Connecting with others was a choice and they had their own strategies to make friends.

5.2.5 Child 3 case summary

The case summary of CH3 is presented in Table 5.5

Table 5.5 CH3 case summary

Child ID	**CH3**	School settings	Enhanced Provision
Gender	Male		
Age	7 yr 1 mo	Concurrent diagnosis	NA
No. of 1on1 meetings	5	Sociometric status	Rejected
No. of observations	2	Reciprocal friends	0
Art work produced by child	2	Nominated as a friend	0

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	7	Slightly lowered
peer problems	2	Close to average
emotional	3	Close to average
hyperactivity	4	Close to average
conduct	1	Close to average
Total difficulties	10	Close to average
Impact score	3	Very high

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	7	Close to average
peer problems	1	Close to average
emotional	5	High
hyperactivity	5	Close to average
conduct	3	Slightly raised
Total difficulties	14	Slightly raised
Impact score	1	Slightly raised

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	14	0	<1
B. syntax	13	0	<1
C. semantic	10	4	4
D. coherence	11	3	2
E. inappropriate initiation	10	6	10
F. stereotyped language	4	7	23
G. use of context	14	3	1
H. nonverbal	8	4	5
I. social relations	4	6	14
J. interests	9	6	10
General Communication Composite - GCC		27	<1
Social Interaction Deviance Composite - SIDC		15	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	24	95	90-100	37	7 yr
Sentence Comprehension: ACE	13	3	0-6	1	
Naming: ACE	9	7	4-10	16	
Sentence Recall: CELF4	6	1	0-2	0.1	

Assessment observations

Naming: *"I hate that" commenting at the end*

Sentence Recall: *kept laughing about the statements, and answering questions instead of repeating them), less engaged in the activity*

5.2.6 CH3 narrative summary

CH3 was a boy in the Enhanced Provision and met with mainstream classroom friends in the afternoons.

Language and communication

DLD was indicated by the combination of GCC (= 27 scaled) and low language battery scores. CH3 was more verbal than CH1 but less than CH2. CH3 was younger than CH1 and CH3. He did not talk in full sentences and spoke a bit slowly with no clear pronunciation of the letter 'H.'

> ***R:*** *So what is it in his tummy then?*
> ***CH3:*** *Tai-il (.) (@) (Hx) I think (::) (h)e-eat (h)imself*
> ***R:*** *Oh he eats himself! Why would he eat himself? (@@)*
> ***CH3:*** *(@) And on to tail he in the, in him tummy*
> ***R:*** *That's funny (.) This is Tim?*
> ***CH3:*** *(H)e get eaten (@)*
> ***R:*** *And this is who?*
> ***CH3:*** *Ray (@) he get eaten, (h)e eat Tim*
> ***R:*** *Why would he do that?*
> ***CH3:*** *He want (to) eat all the foo-d*

CH3 was lively and smiled a lot. He was energetic and became louder with excitement. When he got excited, which could be very sudden and in the middle of talking about a topic, his body language and voice turned more intense. He made funny faces, but language intelligibility remained poor, e.g. *WHATA?!, Wha tat*?

> *CH3 likes laughing. Every time he sees a face pictured or a photograph of a person, he finds it amusing.*
>
> *CH3 is smiling all the time and so it seems as the child is fun to work & play with too. (CH3_DataCollectionNotes)*

CH3 commented on some of the illustrations in the tasks, e.g. *I like ice-cream; I hate that (syringe),* which helped him look interactive but maybe not so much connected with the partner as CH3 were not asked about what they like or not. His initiation might have been perceived as a prosocial behaviour – starting a conversation that looked more interesting to them. SIDC (= 15) supports the perception of CH3 as being prosocial and interactive.

Psychosocial attributes

CH3 scored at the 37th percentile on the Raven's normalisation table, indicating low average performance IQ. There was no indication from the friend or schoolwork observations about

their academic performance. CH3 was very curious and diligent in his work. He wanted to perform well on tasks and kept checking if their answers were correct.

> *After each answer, the child asked if it is correct 'correct?'*
> *I nodded- shout with excitement 'Yes!'*
> *The excitement build with Naming*
> *The child was jumping and almost screaming the names at me.*
> *I had to say shhh and put my finger on my mouth as in quiet, I said we need to be quieter so that we do not disturb the class'*
> *(CH3_DataCollectionNotes)*

CH3 seemed confident and asked for help if needed. However, CH3F reported that CH3 would not have approached teacher about being teased. Instead, they would have said that to CH3F, who then told the teacher.

Behaviours

CH3 revealed being tired during some of our one-to-one meetings. He often yawned in the Mainstream classes in the afternoon.

CH3 acted a little like the classroom clown but did not seem to have many friends in the mainstream classroom. He seemed to have a bigger presence in their class, in comparison to CH1 and CH2. At the same time, CH3 seemed happy enough playing on their own. CH3F believed that CH3 needs to play with classroom peers more if they want to make more friends.

Peer interactions

CH3 used to run a lot in playground and their interviewed friend was not sure why. There could have been a misinterpretation of CH3 wanting to play chasing games and their friend thinking that CH3 did not want to play with them. The friend found CH3 funny because they pretended to cry when the class is sitting together on the carpet. CH3F found CH3 moving a lot in the classroom.

CH3 experienced peers being naughty and making fun of their talk and name.

> ***R:*** *So, Ray and Tim are naughty?*
> ***CH3:*** *Ye-s*
> ***R:*** *What do they do?*
> ***CH3:*** *They ti-ck-le me*
> ***R:*** *They do what?*
> ***CH3:*** *They playing naughty all day (CH3_Friendship)*

The boy did not like it when peers made fun of his name but did not mind playing pretend play using his name as a character with CH3F. This suggests distinguishing between

friendship quality. CH3 captured only CH3F in their Circle of Friends and displayed their friendship more abstractly, using art items as an entertainment during the interview (Figure 5.3).

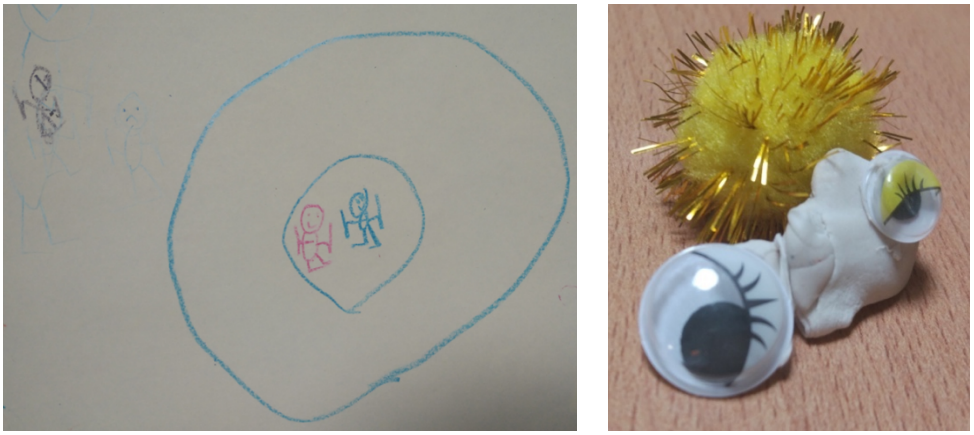


Figure 5.3 Circle of Friends, Friendship by CH3

CH3F showed inclusive mindset by trying to understand CH3F, connect with them, introduce CH3 to more peers in play, and wanted to learn from their mum about morning activities of CH3.

CH3 connected with others through his sunny personality, humour, and silliness. This made the boy pleasant to interact with and can be a way to compensate for his poor language.

CH3's increased movement around the classroom could disturb some children, as CH3F indicated. CH3 and CH3F reported that CH3 was picked on by other peers but went to a friend for help instead of teacher. This can impede their willingness to make new friends.

CH3F acted as CH3's protector and gatekeeper to more peers. CH3F was curious about CH3's activities in Enhanced Provision.

5.2.7 Child 4 case summary

The case summary of CH4 is presented in Table 5.6

Table 5.6 CH4 case summary

Child ID	**CH4**	School settings	Mainstream Classroom
Gender	Male		
Age	8 yr 11 mo	Concurrent diagnosis	None
No. of 1on1 meetings	7	Sociometric status	Average
No. of observations	2	Reciprocal friends	3
Art work produced by child	3	Nominated as a friend	4

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	9	Close to average
peer problems	2	Close to average
emotional	2	Close to average
hyperactivity	5	Close to average
conduct	1	Close to average
Total difficulties	10	Close to average
Impact score	0	Close to average

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	7	Close to average
peer problems	0	Close to average
emotional	2	Close to average
hyperactivity	3	Close to average
conduct	0	Close to average
Total difficulties	5	Close to average
Impact score	0	Close to average

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	6	4	6
B. syntax	6	3	3
C. semantic	4	7	19
D. coherence	9	4	4
E. inappropriate initiation	6	7	23
F. stereotyped language	6	5	6
G. use of context	6	5	5
H. nonverbal	2	8	33
I. social relations	0	13	95
J. interests	6	7	20
General Communication Composite - GCC		43	4
Social Interaction Deviance Composite - SIDC		17	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	23	80	75-85	9	6 yr 6mo
Sentence Comprehension: ACE	8	3	0-7	3	
Naming: ACE	10	5	2-8	5	
Sentence Recall: CELF4	10	1	0-2	0.1	

Assessment observations

Ravens: "*Unusual score composition (9+10+4) Slow, taking thinking time, overall finds easy*

Naming: *"George Washington" (Judge) "what the heck is that?" (armadillo) "Pisa" (pyramid) "Decar" (guitar)*

Sentence Recall: *farts" used as a substitute in 2 occasions answers questions*

5.2.8 CH4 narrative summary

CH4 attended a mainstream classroom. CH4 was offered a place in a special education needs setting but his mum rejected it. CH4 comes from a multilingual background but was born and raised in an English-speaking country.

Language and communication

DLD was indicated by the combination of GCC (= 43 scaled) and low language battery scores. Talking to CH4, their language difficulties were not noticeable in terms of pronunciation or speech. Their difficulties were mostly visible in the sentence structure and the use of grammar, e.g. *I not like that game. I* play *him.; ...and after Oliver and Je'rome didn't like each other now.* CH4 seemed to compensate for their difficulty using colloquial language, e.g. *stuff like this*; *like*; etc.

CH4 recalled that being unable to understand English made him behave outside of the limits in school. CH4 felt weird and as if everyone was talking French. Playing with his Polish friends, listening to them and the teacher, helped CH4 pick up English. CH4 never mentioned any intervention with a therapist, mum, grandma, in Poland or in England.

Psychosocial attributes

Performance IQ result was at the 9th percentile despite CH4 took time to complete the task. He did not seem as competitive as previous children from the Enhanced Provision. Interestingly, CH4 kept failing 1st ToM but not 2nd ToM.

CH4 was playful and used toilet humour with friends and me.

> ***R:*** *Okay, so you come, so your ideal day in a school would look like, you come to school, there's thousands of your friends=*
> ***CH4:*** *(@)*
> ***R:*** *=there's no homework. What do you do?*
> ***CH4:*** *FART (@)*
> ***R:*** *Okay*
> ***CH4:*** *(@@@@@)*
> ***R:*** *You're not serious.*
> ***CH4:*** *(@@) I'm serious (@) I would do that <xxxx> (@@)*
> ***R:*** *(@) Okay. So how would it look like then in the school?*
> ***CH4:*** *We have party.*
> ***R:*** *Okay*
> ***CH4:*** *(@) ((Hx-H-Hx))*
> ***R:*** *So what do you do at the party?*
> ***CH4:*** *Pee everywhere (@)*
> ***R:*** *Okay*

CH4: *((Hx-H-Hx)) (@) In the corridor, and like <xxxx> (@@@)*
R: *(@) Okay (@)*
R: *Okay, I don't think I am going to get anything meaningful from you today.*
CH4: *(@@) Why?*
R: *I don't know, I can't imagine having a school where everybody have party and pee everywhere.*
CH4: *(@@@@@@@@)*
R: *(@@)*
CH4: *(@@) ((H)) I was joking. (@@)*
R: *(@) Okay and can you be serious? (@)*
CH4: *(@@) Yaah.*
(CH4_Wellbeing)

CH4 tried to be funny using childish humour but also indicated self-awareness and switching to an 'adult-like' conversation at the end of the above situation. They continued in a more pragmatic tone when describing their ideal school as having only breaks.

CH4 seemed confident in himself, and revealed being popular among peers, who like to play with them. The social status of CH4 was average but CH4 was popular at the social preference subscale. He received four best friend nominations, three of which CH4 returned. CH4 reported being good in coming up with different games.

Behaviours

CH4 behaviour differed in school and home contexts (as observed and also confirmed by mum). At home, CH4 was very agitated, screamed a lot, and seemed less in control of their behaviour. In school, CH4 was among the first one to get in a queue if leaving class, to pack their books, to pay attention and focus on work. Class teacher praised CH4's behaviour on a number of occasions in front of the whole class.

CH4 mentioned that they used to be rebellious but changed their behaviour after being asked to go to the 'Thinking spot' - that is when a child stands against the wall and should reflect upon their inappropriate behaviours. At that moment, CH4 consciously decided to behave well in class.

Peer interactions

CH4 had a range of friendship experiences. CH4 named many friends, including those from their Polish community (Figure 5.4 left).

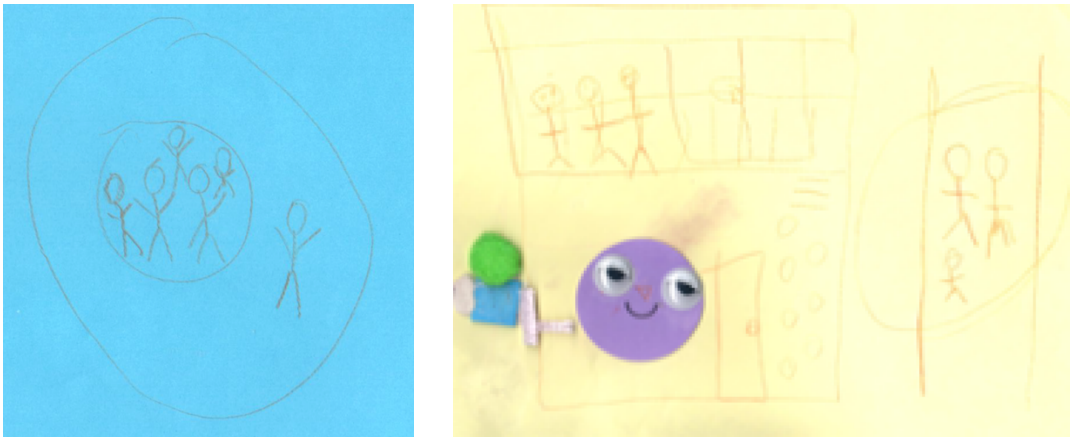


Figure 5.4 Circle of Friends by CH4 and Friends by CH4F

These peers were captured in the Friends drawing of CH4F, who is not related to the Polish community, but portrayed all peers playing together (Figure 5.4 right).

CH4 described contrasts in their friendship experiences. They did not mind playing their school friend's preferred game although they did not like that game. In the case of CH4F, with whom CH4 did not play in school but in their estate, CH4 preferred not to play unless they play the game that CH4 liked. In school, CH4 found CH4F annoying because they took over games and changed rules.

> ***R:*** *Yeah. But like, for example with Jack you are not friends in school but you are friends here, but you are not friends in school.*
> ***CH4:*** *Yeah. Do you know why?*
> ***R:*** *Noo*
> ***CH4:*** *BECAUSE HE DON'T WANTS T-, he every time he is silly and like these stuffs=*
> ***R:*** *=mhm=*
> ***CH4:*** *=and I don't want to br(eak) my friends. Sometimes he breaks my friends' games, and after, that happens.*
> ***R:*** *Mhm. Yeah, that's not nice.*
> ***CH4:*** *And after, and after he tells teacher he is not can play, ehmm, may friends game. You know why?*
> ***R:*** *((shaking head))*
> ***CH4:*** *So, IF HE'S ANNOYING, HE NEEDS to-to, KNOW ONE THING. BE NOT ANNOYING like these [stuffs]*
> ***R:*** *[mhm]*
> ***CH4:*** *if you will be annoying, then you n-ne-never go to let you.*
> ***R:*** *Yeah, yeah.*
> ***CH4:*** *That's true (CH4_Validation)*

If peers asked CH4F to leave, CH4F told the teacher and CH4 found that annoying too. Still, CH4 did play with CH4F in the estate. In a separate instance, CH4 played soccer with CH4F (their preferred game) and helped them clean the estate although CH4 hated doing that. There

was an interesting dynamic in CH4 and CH4F friendship, proving that the friendship worlds of children as old as 8 years can be very rich emotional and interactional experiences.

Borrowing items between children illustrated their friendship's complexity. CH4 did not like CH4F taking their 'stuff' without putting it back. CH4F found CH4 a little greedy and actually knew that taking CH4's stuff annoyed them. CH4F laughed when telling me the story. The physical distance in this case may not have been the best contributor to the relationship. The children were neighbours and played together; however, their friendship might have reflected the relationship of their mothers, encouraging children to play together and look after each other.

CH4F did not notice language difficulties in CH4 and could understand them most of the time. CH4F appreciated that CH4 was teaching them some Polish words.

5.2.9 Child 5 case summary

The case summary of CH5 is presented in Table 5.7

Table 5.7 CH5 case summary

Child ID	**CH5**	School settings	Specific Speech & Lang. Disorder Class
Gender	Female		
Age	7 yr 11 mo	Concurrent diagnosis	NA
No. of 1on1 meetings	7	Sociometric status	Popular
No. of observations	3	Reciprocal friends	3
Art work produced by child	2	Nominated as a friend	5

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	8	Close to average
peer problems	2	Close to average
emotional	1	Close to average
hyperactivity	5	Close to average
conduct	2	Close to average
Total difficulties	10	Close to average
Impact score	0	Close to average

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	10	Close to average
peer problems	1	Close to average
emotional	10	Very high
hyperactivity	8	High
conduct	0	Close to average
Total difficulties	19	Very high
Impact score	4	Very high

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	12	1	<1
B. syntax	1	9	37
C. semantic	5	6	12
D. coherence	4	7	22
E. inappropriate initiation	11	5	5
F. stereotyped language	5	6	14
G. use of context	4	7	23
H. nonverbal	3	7	22
I. social relations	0	13	95
J. interests	6	7	20
General Communication Composite - GCC		48	7
Social Interaction Deviance Composite - SIDC		9	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	30	115	112.5-117.7	84	9 yr
Sentence Comprehension: ACE	22	8	5-11	25	
Naming: ACE	7	5	2-8	5	
Sentence Recall: CELF4	21	4	3-5	2	

Assessment observations

Naming: *used Polish words or exact translations, e.g. ananas (pineapple), sekera (axe), key (spanner). Many didn't know (lobster, factory, syringe, …) what? most of the time to get the sentence repeated back*

Sentence Recall: *commenting the activity, found sentences too long, asked me to repeat*

5.2.10 CH5 narrative summary

CH5 was a girl attending a Special Speech and Communication Class full-time for two years. I met them in their second year. They come a from a non-English native background but were raised in an English-speaking country.

Language and communication

DLD was indicated by the combination of GCC (= 48 scaled) and low language battery scores. CH5 had structural language difficulties, e.g. *I want to have, I want to, I want to stay in, I want to stay at home FOREVER!; ...some days we are like doing bad secrets, like, like, Zara, like, ss- Zara's something happened to Zara.* CH5 used short responses and no stereotypical language, which did not immediately reveal their difficulties.

Psychosocial attributes

CH5 performed at the 75th percentile in Ravens.

CH5 had concrete thinking and named specific peers when asked to describe a good/bad friend. She answered 'don't know' when asked follow-up questions to describe the reasons why CH7 is a good friend. In case of follow-up questions about a bad friend, CH7 described the behaviour of her named 'a bad friend.'

> ***CH5:*** *<xxxx> is not a very good friend to me.*
> ***R:*** *Who isn't?*
> ***CH5:*** *Damien*
> ***R:*** *Damien, mmm.*
> ***CH5:*** *Because when when I'm looking at his book he like say (.) 'Stooop' like a mean word. And I do and I do NOT like it.*
> ***R:*** *Yeah, it's [when you]*
> ***CH5:*** *[I ss-]*
> ***R:*** *look into his book, is it?*
> ***CH5:*** *and sometimes when I do something but not to him, he (might) say 'STOOP' again.*
> ***R:*** *Mhm*
> ***CH5:*** *But I don't like it.*
> ***R:*** *Okay, so what, how do you feel then?*
> ***CH5:*** *Little bit sad.*
> ***R:*** *Sad. And what do you do?*
> ***CH5:*** *Nothing.*
> ***R:*** *Nothing. What would you like to do? What would you like him to do?*
> ***CH5:*** *Stop.*
> ***R:*** *Stop saying that?*
> ***CH5:*** *((nodding))*
> ***[…]***
> ***CH5:*** *But I don't like it.*

(CH5_Retrospective_Validation)

CH5 did not elaborate on her feelings or the character of that peer. This could have been due to her limited vocabulary.

CH5 was confident. They initiated conversations with adults and seemed to be the spokesperson for the class.

Behaviours

CH5 was very warm and caring, especially helpful towards peers that are quieter – a new child in Language Class (1st year). CH5 was friendly and interactive. She started casual conversations with me on a number of times and was curious about the equipment, tasks that followed and data collection meetings with the class.

CH5 did not seem to ask for help even if in need during one-to-one meetings. I reacted to her struggle with crayons by asking specifically if she need help. On the other hand, CH5 regularly offered help to friends and peers.

Peer interactions

CH5 built her classroom friend using play dough (Figure 5.5).

Figure 5.5 Friend by CH5

CH5 was prosocial and popular in class (sociometric report). She was not goofing around, joking or being funny but seemed to care about others, including children in the younger class. CH5 was inclusive and played with other children, not only their best friend – CH7.

> ***R:*** *[…] can you tell me how other children may get help to make friends? You know what could help-*
> ***CH5:*** *Yeah, sometimes when someone is scared or crying I like run to them and see what happened.*
> ***R:*** *Okay. That's very [nice!]*

CH5: *[And] sometimes when they don't have a friend, I run and I ask what happen, and then I look for a friend or they, she can play with us.*
R: *Mhm, mhm. Oh, that's very nice. And do you it just by your own or does somebody ask you to do it?*
CH5: *No, [CH7] helps me sometimes.*
R: *Okay, okay. That's very kind. And how do you feel when you do that? (.)*
CH5: *Mm (.) sad and happy*
R: *Sad and happy? Why sad?*
CH5: *I don't know (@)*
(CH5_Retrospective_Validation)

CH5 smiled a lot and brought up casual conversations with adults. In this way, their pro-sociality appeared a more 'mature' in comparison to other participating children.

5.2.11 Child 6 case summary

The case summary of CH6 is presented in Table 5.8

Table 5.8 CH6 case summary

Child ID	**CH6**	School settings	Specific Speech & Lang. Disorder Class
Gender	Male		
Age	6 yr 8 mo	Concurrent diagnosis	Autism (as per TA)
No. of 1on1 meetings	7	Sociometric status	Neglected
No. of observations	3	Reciprocal friends	0
Art work produced by child	3	Nominated as a friend	0

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	8	Close to average
peer problems	4	High
emotional	0	Close to average
hyperactivity	6	Slightly raised
conduct	0	Close to average
Total difficulties	10	Close to average
Impact score	0	Close to average

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	1	Very low
peer problems	5	High
emotional	1	Close to average
hyperactivity	1	Close to average
conduct	0	Close to average
Total difficulties	7	Close to average
Impact score	5	Very high

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	7	4	6
B. syntax	9	2	2
C. semantic	7	6	12
D. coherence	9	4	4
E. inappropriate initiation	5	9	49
F. stereotyped language	2	9	44
G. use of context	10	4	3
H. nonverbal	8	4	5
I. social relations	3	7	23
J. interests	4	9	50
General Communication Composite - GCC		42	4
Social Interaction Deviance Composite - SIDC		13	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	28	105	102.5-107.5	63	8 yr
Sentence Comprehension: ACE	12	3	0-6	1	
Naming: ACE	5	4	1-7	2	
Sentence Recall: CELF4	9	1	0-2	0.1	

Assessment observations

Ravens: *'did you remember to bring your lunch?' Yes… answers. Continues with stories "The big, brown dog at all of the cat's food" - 'The cat was mad"*

Naming: *"let's just call it scissors" (saw) "let's just call it turtle" (armadillo),"cheater" (judge, might have mispronounced teacher)*

5.2.12 CH6 narrative summary

CH6 was a boy in the second year of the Special Speech and Language Class. Teachers recommended to move him to the autistic supporting class in next academic year. CH6 had a special arrangement and was leaving the school to travel home by a pre-arranged taxi at lunchtime.

CH6 seemed strongly influenced by religion and God theme came up a few times, e.g. *God's friends is Jesus, friendship is forgiving*.

> ***R:*** *What kind of person is a good friend?*
> ***CH6:*** *Mmm. Like Jesus friends?*
> ***R:*** *Mhmm*
> ***CH6:*** *Jesus friend is God.*
> ***R:*** *Mhmm*
> ***CH6:*** *And God friend is Jesus. They never and, they never stop be friends.*
> ***R:*** *Mhmm*
> ***CH6:*** *And friends, ne-, and, I'll get, and friends supposed to be friends forever. (CH6_Friendship)*

When prompted the boy did not seem to understand the meaning of these phrases.

Language and communication

DLD was indicated by the combination of GCC (= 42 scaled) and low language battery scores**.** Understanding CH6 was a little difficult because of their Krio accent. He did not have easily noticeable speech or semantic difficulties. The main CCC-2 difficulties (syntax, coherence, use of context) were observed in the sentence logic (*I don't like, (can't) play, only the line)*, story build-up, and disconnected speech, especially, when they responded with an irrelevant answer.

> ***R:*** *Who else do you play with? (.)*
> ***CH6:*** *Erm, but to when I am six-years-old, right now*
> ***R:*** *Mhmm*
> ***CH6:*** *He get ta-ller*
> ***R:*** *Yeah. (.) And who do you play with then?*
> ***CH6:*** *Then my brother gets taller.*
> ***R:*** *Mhmm. (.)*
> ***CH6:*** *Then I <xxxx> I'm inside is m-, I'm inside this male already. (.) On this term that's my birthday. (CH6_Friendship)*

Similar interactions happened on a number of occasions and created the impression that CH6 lives in their own world.

During the interviews, CH6 diverted the topic and I did not want to interrupt their thinking or focus on the planned themes. CH6 went on with their responses, and stories. They were fixed

to their own thinking and I tried to gently bring them back to my original questions. These difficulties resonate with autism, which the teacher and TA suspected.

Psychosocial attributes

CH6 Raven's score is at the 50th percentile.

CH6 was creative and came up with their own story lines that they kept changing. Their TA shared an example when CH6 talked about a cousin Column one day but next time it was a friend. A more meaningful example of the creativity in CH6's stories involved adding me to their School map and saying that my new job is to oversee if children play together. Another idea of CH6 was to create a book about friendship – another instance of mixed up ideas, when the child confused the illustrations that we had previously discussed with a 'book about friendship.'

> ***CH6:*** *Yes, be-cause, because friendship is always for- forgiving ((yawns))*
> ***R:*** *Forgiving?*
> ***CH6:*** *yes*
> ***R:*** *It's always forgiving*
> ***CH6:*** *And, and do you have a book about that?*
> ***R:*** *I don't have a book about=*
> ***CH6:*** *Hmm*
> ***R:*** *=friends. No.*
> ***CH6:*** *You have it at home?*
> ***R:*** *I don't know what book you mean.*
> ***CH6:*** *The friendship book when you learn for friendship.*
> ***R:*** *Mmm. I don't think I have a book, I have pictures and you were drawing, remember? You were drawing?*
> ***CH6:*** *Mmm, maybe we just made our own friendship book.*
> *(CH6_Retrospective_Validation)*

There was a very little mention of emotions – sad, happy. CH6 avoided talking about more difficult topics, e.g. when CH6F cries. CH6 adjusted his stories and during a retrospective interview, when we watched a clip of CH6 and CH6F playing together, CH6 described a situation that did not happen.

> ***CH6:*** *I wanted that. ((video stopped)) I wanted that grass.*
> ***R:*** *You wanted the grass?*
> ***CH6:*** *Yes, because I had lots of tree but I didn't know (how enough) grass for it.*
> ***R:*** *Oh, you didn't know how to ask for it, okay. Now I see*
> ***CH6:*** *NO, I say, 'Can I get the grass?'*
> ***R:*** *Mhmm*
> ***CH6:*** *And I think (Daniel) say okay.*
> ***R:*** *Mhm*
> ***CH6:*** *And I just get it*

> ***R:*** *Yeah. And is that what happened?*
> ***CH6:*** *Yes.*
> *(CH6_Retrospective_Validation)*

In the video, CH6 did not ask for a toy and Daniel did not respond.

CH6 seemed a little suspicious of me and perhaps thought that I am examining them despite I kept reiterating at the beginning of our meetings that I am trying to learn about friends and friendships in school.

Behaviours

CH6 displayed autistic-like behaviours. He behaved well in class, was aware of the rules and tried to follow them. For example, CH6 did not want to cross the red line between small and big kids playground when we did the School guided tour activity together (Figure 5.6).

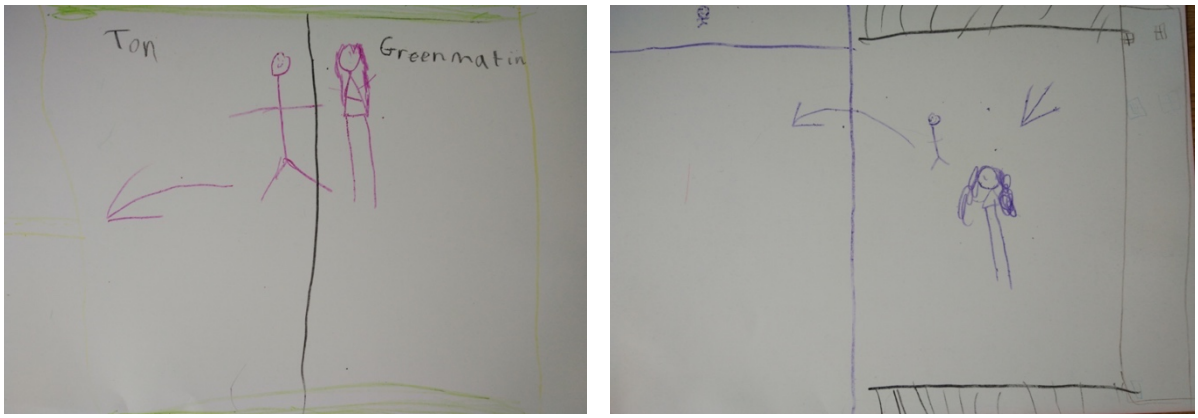


Figure 5.6 School map by CH6

CH6 captured our School guided tour with arrows, showing the path we followed. During interviews, he kept telling me about different school rules.

In the morning, CH6 wore noise cancelling headphones and had time to play while others were having their homework checked up. CH6F made a note about this:

> ***CH6F:*** *He's just in a mood, like, sometimes just wraps (raps?) around*
> ***R:*** *Okay*
> ***CH6F:*** *Sometimes, like today he look like, listen to music and play playdough*
> *(CH6F_Retrospective)*

In our one-to-one meetings, CH6 was often wandering around the interview room. Sometimes they kept telling me new stories, and I was not sure if they wanted to stay and not return to class. On other occasions, they took off almost unexpectedly and went back to class without saying anything.

Peer interactions

CH6 was leaving school early every day and did not have as much contact with peers. They were missing out the play time. In the class, CH6 did not engage with any child. They often talked to himself.

5.2.13 Child 7 case summary

The case summary of CH7 is presented in Table 5.9

Table 5.9 CH7 case summary

Child ID	**CH7**	School settings	Specific Speech & Lang. Disorder Class
Gender	Female		
Age	6 yr 11 mo	Concurrent diagnosis	Autism (being assessed)
No. of 1on1 meetings	7	Sociometric status	Popular
No. of observations	3	Reciprocal friends	1
Art work produced by child	4	Nominated as a friend	4

SDQ scales ***Parent***	*raw score*	*4-band category*
prosocial	10	Close to average
peer problems	3	Close to average
emotional	0	High
hyperactivity	6	Slightly raised
conduct	0	Close to average
Total difficulties	9	Slightly raised
Impact score	0	Slightly raised

SDQ scales ***Teacher***	*raw score*	*4-band category*
prosocial	7	Close to average
peer problems	3	Close to average
emotional	7	Close to average
hyperactivity	6	Close to average
conduct	3	Close to average
Total difficulties	19	Close to average
Impact score	4	High

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	3	7	22
B. syntax	9	2	2
C. semantic	5	7	19
D. coherence	8	5	8
E. inappropriate initiation	8	7	23
F. stereotyped language	4	7	23
G. use of context	10	4	3
H. nonverbal	0	13	91
I. social relations	1	10	52
J. interests	5	8	36
General Communication Composite - GCC		52	9
Social Interaction Deviance Composite - SIDC		17	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	30	125	115-130	95	9 yr
Sentence Comprehension: ACE	17	5	2-8	5	
Naming: ACE	10	7	4-10	16	
Sentence Recall: CELF4	18	4	3-5	2	

Assessment observations

Ravens: *Had to postpone at first because CH7 kept drawing, wanted to finish drawing herself on a roller-coaster. It was 15 minutes before leaving time.*

5.2.14 CH7 narrative summary

CH7 was a girl in the Special Speech and Language Class. TA revealed that CH7 was being assessed for autism.

Language and communication

DLD was indicated by the combination of GCC (= 52 scaled) and low language battery scores. CH7 was rather talkative and had clear speech. I noticed mostly semantics (*So can be all look at, so we can watch the movie of me-ladin),* syntax (*I confused when I play or in a my class)*, and inappropriate initiations.

> ***R:*** *Is there anything else that you like about her?*
> ***CH7:*** *Well, I like about her, I meets ((mean??), well I draw like rainbows.*
> ***R:*** *Mhmm*
> ***CH7:*** *And (.) flowers*
> ***R:*** *Mhm*
> ***CH7:*** *And hearts, and smiley faces, and (diamonds). What are these?*
> ***R:*** *It's a clay! Do you need any help? Yeah, it's really tough to get out.*
> ***CH7:*** *It smells good (@)*
> ***R:*** *Okay ((@@)) And you know sometimes friends might annoy each other or they fell off. Has that ever happened to you and Maya?*
> ***CH7:*** *What is-? Did you cry?*
> ***R:*** *I didn't, no.*
> ***CH7:*** *Like something yeah, if somebody hurt you.*
> ***R:*** *Oh yes, sometimes you can, yeah. (CH7_Friendship)*

Although the SIDC did not indicate autistic like traits, similar communication difficulties were picked up by SLT, teachers, and TA, who referred CH7 for ASD assessment.

Psychosocial attributes

Raven's score was at the 95th percentile.

CH7 had difficulties with abstract thinking. When asked to describe a kind of person who could be a good and bad friend, CH7 responded with specific friends' names. This might have been related to language difficulties as CH7 responded to follow up questions, e.g. 'What are they like?' CH7's descriptions moved to specific characteristics, e.g. kind, nice.

> ***R:*** *Mmm. Okay, and, what do you really like about [CH5].*
> ***CH7:*** *Erm, it's, he is, nn- nice and I like her, her hair's yellow.*
> ***R:*** *Okay.*
> ***CH7:*** *I'm <xxxx> shorter kind of long hair but er it's a little bit short.*
> ***R:*** *Mhmm. And so, er, do you know, is there anything else that you like about [them]?*
> ***CH7:*** *Well, I like about her, I meets (.) well I draw like rainbows. (CH7_Friendship)*

Similarly, CH7 responded with '*I don't know*' when asked why does a person need friends? She followed up with '*I don't know remember all of them.*'

There was an interesting insight into self-esteem, self-confidence and self-perception. In one-to-one meetings, CH7 was confident asking me personal questions, asking for stickers and placing them on their sweatshirt, yet they sought assurance about their map drawing. CH7 seemed quite conscious about how they are perceived by others, for example believing that peers talked about their hair or think that CH7 was ugly. They would not show pictures to peers, if they think the drawing is bad as peers would not like it:

> ***R:*** *And how about you? Do you like showing your pictures to the class?*
> ***CH7:*** *((H)) Yeah*
> ***R:*** *Mhm*
> ***CH7:*** *When I did good drawing or bad drawing, then I won't show it, the bad drawing.*
> ***R:*** *You wouldn't? Why not?*
> ***CH7:*** *Because they wouldn't like it. (CH7_Wellbeing)*

CH7 pretended quite often, even during activities in one-to-one meetings. CH7 was making up conversations about pictures, came up with treasure and coins idea when drawing their school map, and a new YouTube channel on Lego, which CH7 created when playing with a friend in video recording.

Behaviours

At times, CH7 was disengaged in class and in our meetings. They could be gazing around the room or doing their own tasks. They were often singing and humming, which was noticeable and CH9, who was sitting next to CH7, said:

> ***R:*** *And is [CH6] singing also in the classroom?*
> ***CH9:*** *No, only [CH7] is so annoying*
> ***R:*** *Is it?*
> ***CH9:*** *Yeah*
> ***R:*** *((@@))*
> ***CH9:*** *She all songs and there then I was don't like it, is [so annoying] (CH9_Retrospective_Validation)*

CH7 was prosocial and curious when it comes to relationships. During interviews, CH7 showed interest in a kind of bonding way, e.g. '*Tell me your story,*' '*Is your feet hurt?*' Some phrases could have been adult-taught. CH7 was caring and kept checking up on my feet (I took my shoes off in previous meetings); she made an extra drawing for me; telling me that they liked me but I needed to speak up.

> ***CH7:*** *Well, I like you, [Lenka]*
> ***R:*** *[Oh, thank you] That's so kind.*
> ***CH7:*** *Because it's, it's okay if you want to be quiet but I want you to speak louder. (CH7_Wellbeing)*

Again, this phrase could have been a taught phrase as it sounded polite. By asking me to adjust my voice, CH7 demonstrated confidence in asking me, an adult, to adjust my voice.

CH7 tried being funny by scaring me in the corridor during School guided tour. She also scared their friend with a snake at the video. CH7F commented that it happened twice.

Peer interactions

CH7 understood bullying at physical level 'Bullying means you're hitting someone all the time and that's bullyde…bullying'(CH7_Wellbeing) but she did not make connection to her own experiences 'No, nobody's bullying me'(CH7_Wellbeing) that she described in previous interview 'and then David like pull my hair (not nice), I was crying' (CH7_Friendship).

CH7 popular (Sociometrics) and friendly. She included other children in her games with a friend and invited everyone to her birthday party, even peers that were not close friends. CH7 was caring of other peers and approached CH7F, who reported being shy on their first day in school. CH7 and CH7F draw each other in friendship interview (Figure 5.7)

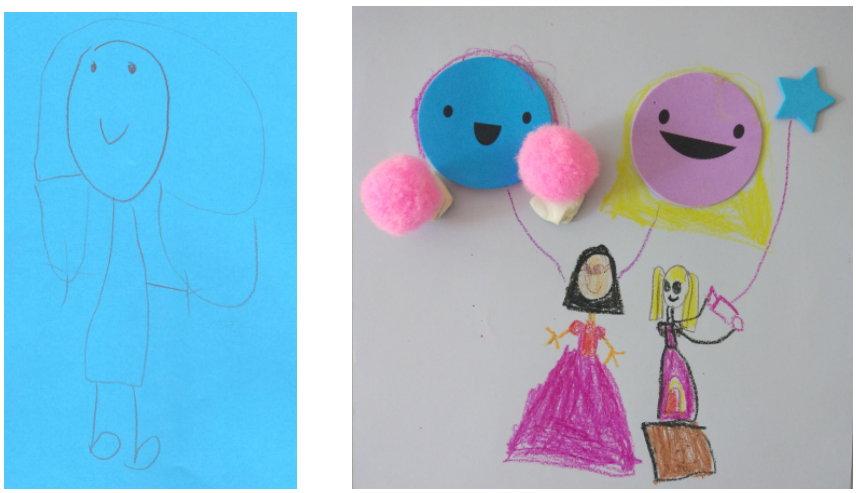


Figure 5.7 Friends by CH7 and CH7F (respectively)

CH7's relationship with CH7F seemed very bonded and children hugged when I picked them up for the video recording.

5.2.15 Child 8 case summary

The case summary of CH8 is presented in Table 5.10

Table 5.10 CH8 case summary

Child ID	**CH8**	School settings	Specific Speech & Lang. Disorder Class
Gender	Male		
Age	7 yr 5 mo	Concurrent diagnosis	Highly functioning ASD
No. of 1on1 meetings	7	Sociometric status	Controversial
No. of observations	3	Reciprocal friends	1
Art work produced by child	2	Nominated as a friend	2

SDQ scales ***Parent***	*raw score*	*4-band category*
prosocial	8	Slightly lowered
peer problems	4	High
emotional	3	High
hyperactivity	4	Slightly raised
conduct	0	Slightly raised
Total difficulties	11	High
Impact score	5	Very high

SDQ scales ***Teacher***	*raw score*	*4-band category*
prosocial	7	Very low
peer problems	3	Very high
emotional	4	Very high
hyperactivity	6	Close to average
conduct	0	Slightly raised
Total difficulties	13	High
Impact score	1	Very high

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	1	10	45
B. syntax	2	7	22
C. semantic	6	6	12
D. coherence	13	3	2
E. inappropriate initiation	10	6	10
F. stereotyped language	5	6	14
G. use of context	10	4	3
H. nonverbal	11	3	1
I. social relations	6	4	6
J. interests	8	6	10
General Communication Composite - GCC		45	5
Social Interaction Deviance Composite - SIDC		-7	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	18	80	75-85	9	5 yr 6 mo
Sentence Comprehension: ACE	17	5	2-8	5	
Naming: ACE	13	9	6-12	37	
Sentence Recall: CELF4	25	4	3-5	2	

Assessment observations

Naming: *"don't know" answered twice, "woman' (judge), "mechanic fixture" microscope, "apple" twice for pepper & cherry*

Sentence Recall: *Tried to read the sentences*

5.2.16 CH8 narrative summary

CH8 was a boy attending the Special Speech and Language Class and was diagnosed with highly functioning autism a short time before our meetings.

Language and communication

DLD was indicated by the combination of GCC (= 45 scaled) and low language battery scores. Additionally, SIDC -7 scaled score aligned with the boy's autism diagnosis. CH8's speech and language did not appear unusual. They spoke slowly and calmly but when getting upset or emotional, CH8 changed tone of voice. They started speaking loud, swapped whispering and shouting, and overall appeared emotional in their speech. CH8 spoke to themself, and sometimes used a quiet and almost 'creepy' voice, and often kept saying *'Yesssss'* using that voice. This happened in situations when they believed that I had mislead them. CH8 liked Star Wars, and I also assumed that some of their 'creepy' speech came from citing that movie. Their language use and sentence structure seemed at a good level:

> ***R:*** *And who do you go play with it there?*
> ***CH8:*** *By myself, because guess what it's fits only one peo- person. (CH8_SchoolTour)*
>
> ***CH8:*** *Yeah, it's my favourite place but it's a little bit cold, I think. (CH8_SchoolTour)*

CH8 appeared rather social in their communication. He brought up casual conversations, e.g. "*we are making a roller coaster in classroom*" and started a conversation about my laptop, which could have been adult-taught strategies. CH8 was also quite responsive and commented on activities:

> ***CH8:*** *Sadly there's no peach*
> ***R:*** *Mm*
> ***CH8:*** *That's a shame. (CH8_Friendship)*

When CH8 did not know the answer, e.g. What kind of friend are you? What is friendship?, he diverted the activity or topic.

Psychosocial attributes

CH8 scored at the 9th percentile in Ravens.

CH8 had an awareness of self and others. He could say skills that he was good at and what others were trying to say. CH8 was quite clear on what he liked and didn't like. When asked to play with a child that CH8 did not like, CH8 refused to play with them.

CH8 was often emotional and got easily upset, e.g. when banging head in classroom with CH9, whose tooth started moving but remained tough, while CH8 kept crying for minutes and did not seem concerned about CH9. TA confirmed emotional overreacting in CH8, who, nevertheless, used to be more anxious at the start of the year. CH8's reaction from a small accident of art and craft pieces falling out of the bag demonstrates the sudden worry.

> ***CH8:*** *Oh no! ((pieces fell off the bag))*
> ***R:*** *That's okay. <xxxx> that you can.*
> ***CH8:*** *OH NO! They just sca-tter around*
> ***R:*** *Yeah! ((@)) [They're too]*
> ***CH8:*** *[So what] do I do now? (CH8_Friendship)*

CH8 suspected me trying to trick him a number of times. For example, the boy did not recognise a sad face in a wellbeing activity with Merrick's (2009) illustrations. He assumed it represented anger. After I confirmed that I did not have an angry face – only happy, sad and neutral – the boy advised me to get one.

CH8 had strong imagination, which diverted a few of our conversations. They pretended often, and I had an impression that they were talking to an imaginary friend or even talked about him/her when we did the tour. They mentioned playing with a friend Zach in their PE group, but Zach was not in their classroom.

Behaviours

CH8 behaved well in the classroom. He was aware of and followed the rules around school. He liked spinning, which TA kept correcting in the classroom. In our one-to-one meetings, CH8 spined on the chair. He also spun on the hanging chair in the PE room during the School guided tour and even captured the spinning chair in his school map (red circle in Figure 5.8 left).

Figure 5.8 School map and a skull by CH8

CH8 found the skull in the school aquarium scary and drew the aquarium in his school map.

Peer interactions

CH8 wanted to connect with others but was equally happy to play on their own. He might have made situations awkward when trying to take over games. CH8 made comments, which could made him appear a little big-headed. For example, CH8 was irresponsive to CH9's questions in the video recording. He said that they knew what CH9 or others were trying to say, which suggested that CH8 thought highly of himself. CH8 called CH9 names not realising that CH9 did not like that.

> ***R:*** *((@)) What did you say, 'he is such a nuke'?*
> ***CH8:*** *Hmm, nn-, yep, because he didn't know where the balloons are supposed to go. ((@@)) (CH8_Retrospective_Validation)*

In a retrospective video session, CH8 did not notice that CH9 helped him.

5.2.17 Child 9 case summary

The case summary of CH9 is presented in Table 5.11

Table 5.11 CH9 case summary

Child ID	**CH9**	School settings	Specific Speech & Lang. Disorder Class
Gender	Male		
Age	7 yr 1 mo	Concurrent diagnosis	NA
No. of 1on1 meetings	7	Sociometric status	Average
No. of observations	2	Reciprocal friends	1
Art work produced by child	3	Nominated as a friend	4

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	9	Close to average
peer problems	2	Close to average
emotional	2	Close to average
hyperactivity	7	Slightly raised
conduct	3	Slightly raised
Total difficulties	14	Slightly raised
Impact score	0	Close to average

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	2	Very low
peer problems	4	Slightly raised
emotional	0	Close to average
hyperactivity	3	Close to average
conduct	3	Slightly raised
Total difficulties	10	Close to average
Impact score	2	High

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	3	7	22
B. syntax	8	2	2
C. semantic	4	7	19
D. coherence	4	7	22
E. inappropriate initiation	3	10	60
F. stereotyped language	5	6	14
G. use of context	4	8	34
H. nonverbal	3	7	22
I. social relations	1	10	52
J. interests	4	9	50
General Communication Composite - GCC		54	10
Social Interaction Deviance Composite - SIDC		13	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	22	90	85-95	25	6 yr 6 mo
Sentence Comprehension: ACE	17	5	2-8	5	
Naming: ACE	8	6	3-9	9	
Sentence Recall: CELF4	15	2	1-3	0.4	

Assessment observations

Naming: *describes functions of saw, barrel, etc if doesn't know*

Sentence Recall: *answers about lunch, but after repeating the sentence first, laughs.*

5.2.18 CH9 narrative summary

CH9 was a boy in the Special Speech and Language Class. He was born and raised in an English speaking country but Bangla was the main language spoken at home.

Language and communication

DLD was indicated by the low language battery scores. The GCC scaled score (54) was just below the limit of 55. CH9 spoke fluently and could hold conversation, which they often initiated. The language difficulties of CH9 were somewhat visible to me as a non-professional, mostly in his pronunciation (speech), syntax, and scripted language.

> ***CH9:*** *Yeah, his coloured loose the compen**d**ition.*
> ***R:*** *Oh, okay.*
> ***CH9:*** *That's a compen**d**ition*
> *(CH9_Wellbeing)*
>
> ***CH9:*** *I just aksed them*
> ***R:*** *Mhmm*
> ***CH9:*** *And that's all it. (CH9_SchoolTour)*

CH9 seemed naturally curious and interested in his speaking partner, and also shared his own stories. The boys was outspoken, e.g. discussed with me my laptop, whether it is an iPad or Apple. CH9 was lively, got excited easily, which projected into his voice. He pronounced some words more loudly *'If you have COUSINS here, like I HAVE a cousin.'*

Psychosocial attributes

The Raven's score was at the 25th percentile. CH9 demonstrated good cognitive flexibility during one-to-one discussions. He was able to simultaneously work on a number of tasks and switch topics. The boy was commenting on his progress with making a friend while answering my questions.

> ***CH9:*** *Not sure you cannot play in class*
> ***R:*** *Oh, you can?*
> ***CH9:*** *Where is the, where is the happy face?*
> ***R:*** *There are some*
> ***CH9:*** *Now I finally find it. That was over here. The small ones I want.*
> ***R:*** *Okay. This one is pinky. So you can play in the class?*
> ***CH9:*** *Nope*
> ***R:*** *Oh you can't*
> ***CH9:*** *We play with <xxxx>*
> *(CH9_Friendship)*

Behaviours

CH9 was prosocial and very engaged in class. CH9 displayed conformed behaviours and were flexible with school tasks.

Peer interactions

CH9 was prosocial, helpful, and looked after their classmates. He had an average status but received four best friend nominations. CH9 came up with games, gave peers options to decide on what to play and offered them their spot in line "*because I want to be friends*." When CH8 accidently banged CH9 in face, and CH9 tooth started moving, CH8 cried and both children were asked to take some time off – sit quietly next to the window.

> *Teacher checked if CH9 feels like crying. It's ok to cry, you can take a time off. CH9 said no. (CH9_DataCollectionNotes, Pos. 21)*

CH9 sat next to CH8 which appeared more of a gesture to support CH8 and CH9 did not really needed the time out. CH9 depicted their best friend holding hands together (Figure 5.9).

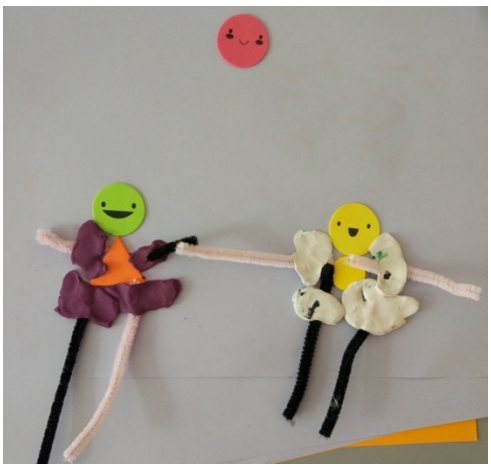


Figure 5.9 Friends by CH9

Additionally, the boy was quite calm and agreeable when in peer interactions. He did not escalate a conflict; when called a *'nube'* by CH8, CH9 took no offence, and instead wanted to be helpful by approaching me to ask how to build the toy. CH9 wanted CH8 to be kind and helpful as CH8 had previous experience with building the toy. When I changed toys during video recording, CH9 was excited to see a new toy but CH8 did not want to change. At the session and in the retrospective interview, CH9 stood behind his choice and supported CH8 despite wanting to swap toys. During the play session, CH9 approached CH8 to look together behind cameras. CH8 was not interested, did not even respond, and CH9 went on to have a

look on his own. CH9 also did not like when CH7 was singing in the classroom and found it annoying. Still, CH9 would not tell that to CH7.

CH9 presented himself as the 'tough one' in the class although he was among the shortest children in the classroom. Physically, the boy appeared less able to fight but he pushed and pulled bigger children in a queue, if something was going on. CH9 did not cry when pushed by a big boy, and they "*felt like brave*." CH9 regularly played football with big kids, and even though he did not have proper shoes for now, he planned to kick harder to up their chances with older children.

These examples portrayed CH9 as a prosocial yet independent child, who did not dwell on situations that did not go according to their ideas. Initially, I considered CH9 as a leader but he could follow others too. CH9 navigated well through critical situations with peers.

5.2.19 Child 10 case summary

The background information of CH10 is presented in Table 5.12

Table 5.12 CH10 case summary

Child ID	**CH10**	School settings	Mainstream Classroom
Gender	Female		
Age	7 yr 11 mo	Concurrent diagnosis	NA
No. of 1on1 meetings	7	Sociometric status	Average
No. of observations	2	Reciprocal friends	3
Art work produced by child	3	Nominated as a friend	3

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	7	Slightly lowered
peer problems	3	Slightly raised
emotional	7	Very high
hyperactivity	6	Slightly raised
conduct	3	Slightly raised
Total difficulties	19	High
Impact score	4	Very high

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	9	Close to average
peer problems	0	Close to average
emotional	5	High
hyperactivity	6	Slightly raised
conduct	1	Close to average
Total difficulties	12	Slightly raised
Impact score	0	Close to average

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	6	4	6
B. syntax	4	5	10
C. semantic	6	6	12
D. coherence	18	1	<1
E. inappropriate initiation	15	4	1
F. stereotyped language	9	3	2
G. use of context	13	3	1
H. nonverbal	10	3	1
I. social relations	7	3	2
J. interests	8	6	10
General Communication Composite - GCC		29	1
Social Interaction Deviance Composite - SIDC		0	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	18	70	65-75	2.3	5 yr 6 mo
Sentence Comprehension: ACE	19	5	1-9	5	
Naming: ACE	3	3	0-6	1	
Sentence Recall: CELF4	12	1	0-2	0.1	

Assessment observations

Naming: *"to look through your eyes" microscope*

5.2.20 CH10 narrative summary

CH10 was a girl attending full-time mainstream classroom. CH10 received Speech, Language, and Communication Needs (SLCN) interventions in the 3 months before our meeting. The SENCO revealed that CH10 experiences severe difficulties and was in the process of full autism assessment, which got stopped by the child's mother. 0 SIDC score indicated disproportionate pragmatic difficulties and the need for autism assessment. CH10 had a close group of four friends in class.

Language and communication

DLD was indicated by the combination of GCC (= 29 scaled) and low language battery scores. CH10 was chatty, and her language difficulties were somewhat noticeable. They had difficulties with pronunciation and mixing words.

> ***CH10:*** *[Yes] Ehm, em, in there are, a Hall=*
> ***R:*** *=mhm=*
> ***CH10:*** *=we have sambaleys ((assemblies?))*
> *(CH10_SchoolTour)*

CH10 shared many stories, but spoke fast and with a less organised structure (coherence), which made a more complex stories hard to follow.

> ***CH10:*** *Em, she, em, makes me happy because, em, she, em, makes me really em, happy, because, when I-I, when I'm upset, she always calms people, and em, she comes to people when they're really upset, and upset, and if sh-, if you're upset and she sees us, she always says, 'What' Like Cayll yesterday, that guy in the f-, CH12 (kids and treat). Me and CH12 went up to Kate to say 'Are you okay?' and em, we then, Jay then Cayll said 'It was Jay.' And then we just sort it out straightaway, then, they just got back to friends, each, and again and again.*
> *(CH10_Friendship)*

CH10 mentioned enjoying talking to friends. It was positive that she did not perceive herself as having difficulties or not to the level that it would have impacted other aspects of her interactions, like connecting with others via talking.

Psychosocial attributes

CH10's Raven's score was at the 2.3rd percentile. She was creative, which came through in her ToM answers. Although they did not pass most ToM activities, she described their explanatory stories thoroughly.

CH10 got a little confused in her stories. This could have been due to her language and communication difficulties or her strong self-concept tendencies to portray herself as doing

the right thing, caring, sorting out things in class – ensuring peers were not upset, supporting friends, showing peers how to do things when they were new, sorting conflicts with peers, telling teacher if needed.

CH10 corrected some of her stories, for example when she had mentioned being on the school council twice but then we returned to the story and she said someone else was on the counsil.

> ***CH10:*** *'Cause, ehm, I usua(-ne) wanna feel, got out, and I went to sort, 'cause, I am, em, 'cause I, em, it's, I am, em, ((Hx)) I'm a school council.*
> ***R:*** *You are a school counsil. What does it mean to be a school council?*
> ***CH10:*** *Ehm, it means you have to go and have meetings Mondays*
> ***R:*** *Mhmm. And who is, who else is there as school council?*
> ***CH10:*** *Ehm, me and Jay.*
> ***R:*** *Is Monica or Mary or Layla*
> ***CH10:*** *Mmm, no.*
> ***R:*** *[No]*
> ***CH10:*** *Is it, it was CH12 first, it was CH12, still CH12, but em, I don't know what the kids school council means, and is CH12 and Jay who is it, it is, and em, ((swalllows))*
> ***R:*** *What do you have to do if you are a school-*
> ***CH10:*** *I don't know, 'cause CH12 and Jay are school council (CH10_Retrospective_Validation)*

CH10F confirmed that CH10 was not part of the school council.

Behaviours

CH10 strictly followed the Golden rules outlining children's interactions in school. She told teachers about issues with peers if needed – if children cannot resolve problems themselves.

> ***R:*** *Mhmm. So it's rude to whisper, is it?*
> ***CH10:*** *((nodding))*
> ***R:*** *Okay. Have you seen anyone whispering in school?*
> ***CH10:*** *((nodding))*
> ***R:*** *Yeah? What happened?*
> ***CH10:*** *Ehm, ((H)) in our school if you whisper, and, we then have to go and tell*
> ***R:*** *Okay, I didn't know. It sounds like you have some rules in the school, yeah*
> ***CH10:*** *Li- our Golden ru[les]*
> ***R:*** *[Your] Golden rules, yeah. Is it easy to follow them?*
> ***CH10:*** *((nodding)) (CH10_Wellbeing)*
>
> ***CH10:*** *And, ehm, if, ehm, you have to listen to be-each other, and em, if you don't that's em, that's rude. (CH10_Wellbeing)*

CH10 was very competitive and creative. She liked to sing and dance, CH10F confirmed that CH10 teaches other peers their routines. In our meeting, CH10 shared an idea to have a dance competition.

Peer interactions

CH10 was prosocial, invited peers to join play, and protected younger or new children. She was friendly and caring. CH10 acted like a little manager of the group of their friends. She was curious about my activities with others, wanted to know who completed what, and when I would see others at almost every occasion that we met. CH10 had the tendency to correct others, including me when I mentioned the Garden club and got corrected that it was the 'Gardening' club. In the video, CH10 reflected that she corrected CH10F but it was the other way around.

At the same time, CH10 did have a small conflict when one of her best friends did not want CH10 to join them in play. The reason might have been that peers could perceive CH10 as noisy or taking over activities. When that happened, CH10 found an explanation (friends did not need the role of CH10), and CH10 actively asked to re-join their friends, CH12 and CH12F. CH10 found those that did not let children join their games as mean, and her mindset was inclusive. The responses of CH10F confirmed the same, and CH10F perceived CH10 as kind and inclusive.

5.2.21 Child 11 case summary

The case summary of CH10 is presented in Table 5.13

Table 5.13 CH11 case summary

Child ID	**CH11**	School settings	Mainstream Classroom
Gender	Female		
Age	8 yr 9 mo	Concurrent diagnosis	NA
No. of 1on1 meetings	7	Sociometric status	Rejected
No. of observations	2	Reciprocal friends	1
Art work produced by child	2	Nominated as a friend	1

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	10	Close to average
peer problems	3	Slightly raised
emotional	1	Close to average
hyperactivity	7	Slightly raised
conduct	0	Close to average
Total difficulties	11	Close to average
Impact score	1	Slightly raised

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	4	Low
peer problems	3	Slightly raised
emotional	0	Close to average
hyperactivity	3	Close to average
conduct	0	Close to average
Total difficulties	6	Close to average
Impact score	3	Very high

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	11	1	<1
B. syntax	5	4	6
C. semantic	10	3	2
D. coherence	11	3	2
E. inappropriate initiation	7	7	23
F. stereotyped language	8	4	3
G. use of context	14	2	<1
H. nonverbal	4	6	15
I. social relations	1	9	38
J. interests	6	7	20
General Communication Composite - GCC		30	1
Social Interaction Deviance Composite - SIDC		18	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	11	<60	<60	0.1	<4y
Sentence Comprehension: ACE	17	4	0-8	2	
Naming: ACE	4	3	0-6	1	
Sentence Recall: CELF4	11	1	0-2	0.1	

Assessment observations

Ravens: *confident in completing the tasks "this one, definitely"*

5.2.22 CH11 narrative summary

CH11 was a girl attending mainstream settings full-time. She had seen paediatrician several times, parents had been dedicated and worked with the child but none of the interventions had improved CH11's social communication. SENCo believed that the girl's social communication difficulties were genetic and might become more visible with age.

Language and communication

DLD was indicated by the combination of GCC (= 30 scaled) and low language battery scores. CH11 spoke fluently, and at times gave the impression of answering eloquently. She used words such as obviously, definitely, or normally that other children did not use. Her articulation (speech) and word order (syntax) could be a little problematic at times. CH11 used nonverbal communication and gestures a lot and I observed this only in later sessions.

> ***CH11:*** *I can, I know they're being MEAN because they pushing, shoving*
> ***R:*** *Mhm*
> ***CH11:*** *and some people did that in my class, definitely, and ehm, some (uni force), yeah*
> ***R:*** *How does it make you feel when it happens?*
> ***CH11:*** *((makes a sad face and turns bottom lips upside and out)) sad*
> ***R:*** *Mhm*
> ***CH11:*** *Not happy but sad. And sad people are bad, if they're smiling, I, I wouldn't smile.*
> ***R:*** *Mhmmm Okay*
> ***CH11:*** *I will go ((neutral face))*
> ***R:*** *Okay, even if they smile, you don't smile back, [okay]*
> ***CH11:*** *[mmm] You just say ['nothing'] ((neutral face))*
> ***R:*** *[mhm]*
> ***CH11:*** *Like that but if you play happy, you smile*
> ***R:*** *Mhm, [mhm]*
> ***CH11:*** *[if you're] playing sad ((makes a sad face)) (CH11_Retrospective)*

CH11 was making faces when working with illustrations during tasks, e.g. sad face and turning bottom lip out, telling me to listen and pointing at CH11's ear, gesturing with hands, e.g. touching their thumb and forefinger when saying *"chat chat chat."*

It almost felt as if CH11 started mirroring some of my gestures.

> *CH11 gestures a lot and seems to give a social clues, which purpose I do not understand at times. The gestures make CH11 look as if they are connected and in communication but these notions are missing any substantial point. This type of communication evokes the body of research on camouflage strategies by autistic girls – being always positive, constantly smiling and compensating lack of communication with gestures that are not fully substituting or carrying a message. (CH11_DataCollectionNotes)*

Although CH11 was talkative, interacting with her was difficult due to limited connected speech. She followed her lines of thoughts, kept describing her actions (what material she uses, why she uses it), and demonstrating her games. CH11 was fixed on tasks, when for example drawing the map of school, and would not answer my questions, gave very short or *'don't know'* answers.

Psychosocial attributes

CH11 scored at the 0.1st percentile in Ravens *despite taking time to review the shapes and following the patterns with her fingers*. *She* had difficulties with ToM and emotion recognition tasks.

> *CH11 seemed to enjoy the stories but failed all of them. Also Raven score may be rather poor. CH11 did not get the fact that each set of face recognition photos contain each of the emotions. CH11 assigned different emotions to the same photo. (CH11_DataCollectionNotes)*

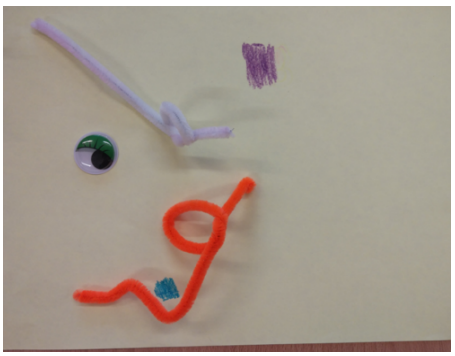
CH11 showed social understanding. In Merrick's (2009) illustrations, CH11 noted that although a bullying boy is smiling, the boy *'is not really smiling.'* She was attentive and passed CH11F a toy they needed without being asked. During the friendship interview, CH11 made a present to CH11F using CH11F's favourite colour and ensured the art work is safe and holds together. When my stomach was rumbling, and I mentioned that I am getting hungry, CH11 said that she is getting hungry too. CH11 might have been trained to use similar interaction strategies in social context. Still, she failed at emotion recognition and kept assigning different emotions to the same photo of a child.

CH11 made self-awareness comments, e.g. *'I am getting a bit silly now!'* and perceived herself positively – being skilful, and proud of her work. She posed and smiled in the camera when holding a picture of their art. CH11 showed me her own stitching work hanging on a corridor wall, *'I like it*' and commented positively about her art work.

CH11 had rejected status in peer nominations (sociometrics) but perceived herself positively as a friend, *'kind and loving people'* and used the same description of her friend.

> ***R:*** *Okay. And what kind of person makes a good friend?*
> ***CH11:*** *Normally, me. Normally me.*
> ***R:*** *Mhm. (.)*
> ***CH11:*** *[Yeah]*
> ***R:*** *[So] what would a good friend be like?*
> ***CH11:*** *((Hx)) Errrr*
> ***R:*** *What do they do, what do they say?*
> ***CH11:*** *They say 'Yes' and 'Yes'*

R: *Mhmm*
CH11: *"yes, I will play with you"*
R: *Okay*
CH11: *No, I will play with you ((@))*
R: *((@))*
CH11: *Sometimes says <xxxx> (CH11_Retrospective)*



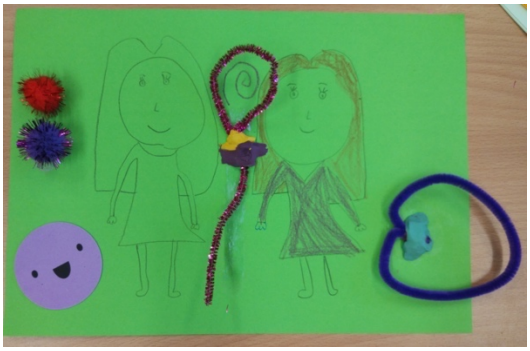


Figure 5.10 Friendship by CH11 and CH11F

CH11 did not portray a specific friendship concept.

Behaviours

CH11 behaved well and followed the rules in school, like not running in the yard. She tried to be quiet as we were walking down the corridors during a School guided tour, and when we were conducting interviews in a classroom. Being aware of another class next door, CH11 whispered her answers.

CH11 liked pretending and behaved spontaneously when safe to do so during the School guided tour. She was dancing, spinning, and dramatized her speech with actions.

CH11: *Yeah. But we hardly gonna see everything ((@)) 'cause some over-there, some over here, daaah ((@))((child spins))*
R: *Okay ((@@)) You like dancing! ((@@))*
CH11: *Yeah! ((@)) I'm dancing! [<xxxx>]*
R: *[Yeah] ((@@)) [((@@))] [You're so funny]*
CH11: ***[****((@@))] And, also*
R: *((@))*
CH11: *obviously we wouldn't sit under the tables, obviously ((@))*
R: *Okay*
CH11: *But we, have to, I have to go down a little bit, and this is ((@)) where, this is where we, so it's only if there is like, obviously, I have to be careful 'cause there's papers here*
R: *Mhmm*
CH11: *so, we sometimes not lean on here*
R: *right*
CH11: *but we just sit in and look straight ahead ((sits down as in assembly)) (CH11_SchoolTour)*

CH11 was less interactive in class. She focused on tasks and got on with her work well.

Peer interactions

CH11 and CH11F were reciprocated friends. They had an exclusive friendship and played together without other peers around, which CH11 captured in their Circle of Friends (Figure 5.11).

Figure 5.11 Circle of Friends by CH11

CH11 and CH11F shared similar characteristics - being funny, and interests - dancing, drama shows. They seemed to have a high-quality friendship, shared secrets, and enjoyed a lot of pretend play together. CH11 represented an example of a friendship quality being more important than quantity to feeling good at school. CH11 mentioned other friends playing at Trim trail[2] during the School guided tour, but CH11 did not say that they would play together. In playground, CH11 was happy to be on her own.

[2]A Trim trail is an obstacle course typically designed for children and located in outdoor playgrounds. A Trim trail path consists of different bars, balance beams, etc. representing a physical challenge to children whose aim is to get from one end of the Trim trail to the other without falling.

5.2.23 Child 12 case summary

The case summary of CH12 is presented in Table 5.14

Table 5.14 CH12 case summary

Child ID	**CH12**	School settings	Mainstream Classroom
Gender	Female		
Age	7 yr 10 mo	Concurrent diagnosis	Dyslexia
No. of 1on1 meetings	7	Sociometric status	Popular
No. of observations	2	Reciprocal friends	2
Art work produced by child	3	Nominated as a friend	4

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	10	Close to average
peer problems	1	Close to average
emotional	4	Slightly raised
hyperactivity	7	Slightly raised
conduct	3	Slightly raised
Total difficulties	15	Slightly raised
Impact score	4	Very high

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	9	Close to average
peer problems	0	Close to average
emotional	1	Close to average
hyperactivity	5	Close to average
conduct	0	Close to average
Total difficulties	6	Close to average
Impact score	0	Close to average

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	14	0	<1
B. syntax	3	6	15
C. semantic	14	2	1
D. coherence	12	3	2
E. inappropriate initiation	14	4	1
F. stereotyped language	8	4	3
G. use of context	7	5	5
H. nonverbal	5	5	9
I. social relations	2	8	31
J. interests	7	7	20
General Communication Composite - GCC		29	1
Social Interaction Deviance Composite - SIDC		13	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	25	95	90-100	37	7 yr
Sentence Comprehension: ACE	24	10	7-13	50	
Naming: ACE	13	9	6-12	37	
Sentence Recall: CELF4	33	6	5-7	9	

Assessment observations

Naming: *"looking in closer" microscope "unsure" armadillo*

Sentence Recall: *naming days by using fingers, undecisive - 3x questions when would say both or pointed at both Q26, 28, 34, 35*

5.2.24 CH12 narrative summary

CH12 was a girl in a full-time mainstream classroom. She had been receiving SLCN interventions for over 12 months.

Language and communication

DLD was indicated by the combination of GCC (= 29 scaled) and low language battery scores. CH12 spoke fluently and had a lisp. In my reflective journal, I noted:

> *CH12 did provide full answers, and not knowing that CH12 has received interventions, I would not even noticed that CH12 experiences difficulties in language and communication. (CH12_DataCollectionNotes)*

SENCo confirmed that CH12 experienced difficulties with writing, and dyslexia could be their major difficulty. In the School guide tour activity, CH12 kept adding room names to the drawing and asked me about spelling. In the activity 'How I feel about my friends in school….' she answered by writing *"Happy paly nicy."* Other writing difficulties examples included *'I'm favourite'* instead of *'My favourite.'* I did not correct her but helped with spelling when asked. Despite the wrong spelling, CH12 pronounced the writing correctly. She was enthusiastic about writing, although she might not have been writing very well. This may be that her previous SLCN interventions might have evoked the idea of need to write when meeting me.

Psychosocial attributes

CH12 scored at the 37th percentile in Ravens and passed ToM.

> *The child gave some good explanations when answering. They also revealed insights about the child way of thinking, e.g.' Tim is sad although he has a bike, but he would like his friend to have one.' Correct answer is Tom is happy. (CH12_DataCollectionNotes)*

CH12 described herself as kind, good at art, funny, making silly faces because that's what other children like… To me, this showed a positive self-concept and social awareness.

> ***R:*** *Why do you think that is, that people want to be your friend and really like you a lot?*
> ***CH12:*** *I think it's because I am kind of the second funniest*
> ***R:*** *Okay*
> ***CH12:*** *in the class.*
> ***R:*** *Who is the first?*
> ***CH12:*** *I think it's Alec or Lucy, it's between them two.*
> *(CH12_Retrospective_Validation)*

R: *Yeah, I mean if you want to be funny what do you do?*
CH12: *I normally er do funny faces, 'cause it's the most the popular thing*
R: *Okay*
CH12: *what help people laugh [to]*
(CH12_Retrospective_Validation)

CH12 displayed abstract concepts when describing friendship symbolised as a cross or intertwined fingers (Figure 5.12).

Figure 5.12 Friendship by CH12

CH12 assigned a lot of weight to her friendships.

R: *and you say because you need to like let go of your energy?*
CH12: *Mm yeah*
R: *So what sort of energy is it?*
CH12: *So like it's like badness, like if I-*
R: *[mmm]*
CH12: *[I need] to play with my friends to get my goodness back*
R: *[okay]*
CH12: *[get all] my body into my goodness.*
(CH12_Retrospective_Validation)

A more complex friendship of 2-3 close friends created challenges for CH12. She was popular and friends were fighting over her attention. CH12 did not like these conflicts.

Behaviours

CH12 behaved well, followed the Golden rules, and seemed to be the one influencing CH12F to behave well during the video recording. Still, the children were having fun, performing in front of the cameras, and hiding behind them too. They were 'making plots' of their next moves and whispering about me watching them through the cameras (revealed at interviews).

In class, CH12 was working on tasks. In pairs, CH12 left the work on the partner but was the one to approach teacher for help, clarifications.

Peer interactions

CH12 had complex friendships, involving secrets, pretend play, singing, dancing, playing behind cameras, but also some broken promises and lies. Children tried resolving conflicts among themselves, but CH12F mentioned that she called in a teacher at times, when children could not sort things out among themselves.

> ***R:*** *Mhmm, mhm*
> ***CH12:*** *and it's really hard for us to figure it out by ourselves*
> ***R:*** *Yeah*
> ***CH12:*** *so we have to, so we have to go to each other and just say pon- just applogise (appologise)*
> ***R:*** *Mhm*
> ***CH12:*** *that's what I really do. But with CH10 it's difficult but then, with, normally it's not me and CH10, me and CH10, we've never falled out*
> ***R:*** *Mhmm.*
> *(CH12_Friendship)*

Still the friendship with CH12F made CH12 happy as it was supportive.

> ***CH12:*** *Err, because they are very kind to me and, they help me, and er, we never give up on each other*
> ***R:*** *Mhm*
> ***CH12:*** *We always tell each other "Don't give up"*
> ***R:*** *Mhmm*
> ***CH12:*** *sometimes, and I like it when we're all kind to each other*
> ***R:*** *right*
> ***CH12:*** *'cause it makes us happy*
> *(CH12_Friendship)*

There was another level of dynamic in the friendship when CH10 also joined in. CH12 claimed to have two *'best friends forever,'* CH12F and CH10. According to CH12F, CH10 was trying to get CH12 away from CH12F, even asking CH12 not to play with CH12F. CH12F got jealous because of that and would prefer playing only with CH12. Conflicts among friends created challenges for CH12, who preferred being on their own when the two friends were fighting.

5.2.25 Child 13 case summary

The case summary of CH13 is presented in Table 5.15

Table 5.15 CH13 case summary

Child ID	**CH13**	School settings	Mainstream Classroom
Gender	Female		
Age	8 yr 10 mo	Concurrent diagnosis	
No. of 1on1 meetings	6	Sociometric status	Rejected
No. of observations	2	Reciprocal friends	1
Art work produced by child	3	Nominated as a friend	1

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	5	Very low
peer problems	1	Close to average
emotional	1	Close to average
hyperactivity	2	Close to average
conduct	9	Very high
Total difficulties	13	Close to average
Impact score	5	Very high

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	5	Slightly lowered
peer problems	3	Slightly raised
emotional	2	Close to average
hyperactivity	4	Close to average
conduct	4	High
Total difficulties	13	Slightly raised
Impact score	2	High

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	8	2	1
B. syntax	2	7	22
C. semantic	10	3	2
D. coherence	5	6	14
E. inappropriate initiation	4	9	49
F. stereotyped language	4	6	14
G. use of context	9	4	3
H. nonverbal	6	5	9
I. social relations	3	6	14
J. interests	4	9	50
General Communication Composite - GCC		42	4
Social Interaction Deviance Composite - SIDC		11	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	20	75	70-80	5	6 yr
Sentence Comprehension: ACE	20	5	1-9	5	
Naming: ACE	10	5	2-8	5	
Sentence Recall: CELF4	17	1	0-2	0.1	

Assessment observations
Sentence Recall: cheeky, leaning over to read the sentences

5.2.26 CH13 narrative summary

CH13 was a girl attending a full-time mainstream classroom. She had been receiving SLCN interventions for more than 12 months.

Language and communication

DLD was indicated by the combination of GCC (= 42 scaled) and low language battery scores. CH13 had difficulties with pronunciation, specifically with 'backing.' She omitted a letter 'd' for example *"Fri(d)ay!"*and switched the letters 't' with 'ch' as in below:

> ***CH13:*** *I like about school 'cause ehm, our cheachers ((teachers)) are so nice and our tee- TeeAs ehm, let us go to toilet and have a drink (CH13_Wellbeing)*

CH13 gave shorter answers. The child provided tangential responses and switched topics abruptly and in a disjointed fashion. It was not clear whether this was related to their potential disengagement with the topic, misunderstanding, or lower attention span. In these disjointed speech episodes of conversation, I found it challenging to follow the child.

> ***R:*** *Okay. So, is there anything else that you like about school or where you like to play in school?*
> ***CH13:*** *Ehmm, at my little sister's classroom*
> ***R:*** *Yeah, but do you go there on your own?*
> ***CH13:*** *Ehm, yeah.*
> ***R:*** *Okay. Or is Ilane or Cath going with you?*
> ***CH13:*** *Actually, Cath. (.) [And Ilane]*
> ***R:*** *[Cath does?] Oh that's nice. (.) And what do you do in the classroom?*
> ***CH13:*** *We ehm, do, history, English, math*
> ***R:*** *In your sister's classroom?*
> ***CH13:*** *No, no.*
> ***R:*** *Okay. What do you do in your sister's classroom then?*
> ***CH13:*** *We ehm play with Lego*
> ***R:*** *Okay*
> ***CH13:*** *And put puzzle together*
> ***R:*** *Mhmm*
> ***CH13:*** *Playing with my little sister's at her and my, my house*
> ***R:*** *Mhm*
> ***CH13:*** *We're sisters and cousins ((@))*
> *(CH13_SchoolTour)*

Psychosocial attributes

CH13 scored at the 55th percentile in Ravens and did not pass ToM. However, she showed good social understanding when describing her friendships.

CH13 conceptualised herself positively and was aware of her negative behaviours in class.

> ***R:*** *What happened? Why did you broke up?*
> ***CH13:*** *Well, we were messing around with others (sorry), ehm, Cath decide not be my friend, but now we are friends*
> ***R:*** *You messed, you were messing around here in school?*
> ***CH13:*** *((nodding))*
> ***R:*** *What were you doing?*
> ***CH13:*** *I was ehm talking to my partner*
> ***R:*** *Mhmm.*
> ***CH13:*** *And, I was not listening to Mrs M ((whispering Mrs M))*
> ***R:*** *Okay. So Cath didn't like that. Okay.*
> *(CH13_Retrospective_Validation)*

CH13 had a positive bias towards her interactions with best friend. In a retrospective video interview, she described a conflict with CH13F as if it did not happen.

CH13 had self-esteem high enough to get follow her interests or leave if the group does not do what CH13 likes. She found it easy to make friends and tells peers off if they do not let CH13 or CH13F join their games.

> ***CH13:*** *Cause sometimes Jaya, my friend, don't let me play.*
> ***R:*** *Okay, what do you do then?*
> ***CH13:*** *Then I just tell off*
> ***R:*** *You tell, you tell your teacher?*
> ***CH13:*** *Yes*
> ***R:*** *Okay. And how, how do you feel? How does it [make you feel?]*
> ***CH13:*** *[Uhmmmm] (.) (.) happy because I told off*
> ***R:*** *Mhmm*
> ***CH13:*** *And sad she, she won't let me play (CH13_Wellbeing)*

CH13 revealed not being that self-assured when presenting in assembly and would prefer having her friends next to them. The physical dimension of having friends nearby or even sitting next to her in class was still present in the CH13's experiences of friendships in school.

Behaviours

CH13 was less flexible in picking up activities and did not want to do the school tour. She tended to be a 'touchy, feely' type and liked hugging toys, teachers, and me after just meeting me on the first day. TA considers hugging others as CH13 being needy.

CH13 paid regular visits to the first aid room. It happened twice at our meetings - when she had a dead leg after sitting on it, and when she picked at an old wound that started bleeding.

> *This form of attention seeking seems unusual, particularly, 2 independent first aiders (last week and today) confirmed that CH13 sees them often.*
> *(CH13_DataCollectionNotes)*

I considered these tendencies as a way to not do the tasks in class or calling for help because of a deeper issue. The first aiders knew the child well. CH13 always got a sticker after leaving the first aid room. CH13 got a special attention in the classroom too, when teachers let her not join activities and sit in quiet.

Peer interactions

CH13 had rich friendship experiences. For example, they used to be mean to CH13F, with whom they became friends. Despite the notions of complex relationships with peers, CH13 gave very little insights and diverted the conversation.

> ***R:*** *Okay ((@)) (.) So is there anything else why you need a friend, why friends are important?*
> ***CH13:*** *Now my hands are (weird) ((dirty?))*
> ***R:*** *We'll wash them. Yeah, there's a sink, after you're finished.*
> *CH13: [Mmm]*
> ***R:*** *[So] what are you making? What is that?*
> ***CH13:*** *I need an eye ball*
> *(CH13_Friendship)*

I was not sure whether these distractions were linked to disconnected speech and what role topic interest or attention span could have played.

CH13 was part of a group of friends and has interesting dynamics going on within the group. CH13F confirmed that there is one more friend in their group.

> ***CH13:*** *[…] So me and Ilane were playing together and then, Ilane just said, "Ehm, CH13F, me and Cath need to talk togen ((together, again?))" and I walked off, happily and cheerly. Then they still come back and they talked to me a bit, and stuff. And my friend Cath just, we asked her "go away please, we're having a talk" me and Ilane, and she just said "NO! I'm STAYing!"*
> ***R:*** *Okay. So Cath wouldn't leave*
> ***CH13****: Mmm*
> ***R:*** *And what did you talk about?*
> ***CH13:*** *Ehm, not that much, stuff.*
> ***R:*** *Okay. You just wanted to be together [alone]*
> ***CH13****: [Mm]*
> *(CH13_Friendship)*

CH13 presented somewhat negative global view on friends, when she revealed liking CH13F because they were less mean to them than another friend.

In Figure 5.13 left, CH13 portrayed her friends with different colours but there was no meaning to the colours when I asked.

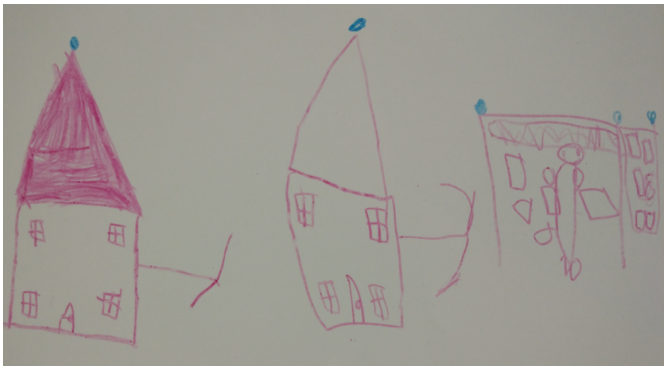


Figure 5.13 Friend and School map by CH13

CH13 walked to school with CH13F, whom she picked up on the way to school. She drew this route her house – friend's house – school in Figure 5.13 right.

5.2.27 Child 14 case summary

The case summary of CH14 is presented in Table 5.16

Table 5.16 CH14 case summary

Child ID	**CH14**	School settings	Mainstream Classroom
Gender	Female		
Age	7 yr 1 mo	Concurrent diagnosis	Learning difficulties
No. of 1on1 meetings	4	Sociometric status	Average
No. of observations	2	Reciprocal friends	1
Art work produced by child	3	Nominated as a friend	2

SDQ scales: ***Parent***	*raw score*	*4-band category*
prosocial	6	Low
peer problems	4	High
emotional	4	Slightly raised
hyperactivity	4	Close to average
conduct	8	Very high
Total difficulties	20	Very high
Impact score	7	Very low

SDQ scales: ***Teacher***	*raw score*	*4-band category*
prosocial	7	Close to average
peer problems	0	Close to average
emotional	3	Close to average
hyperactivity	5	Close to average
conduct	0	Close to average
Total difficulties	8	Close to average
Impact score	2	High

CCC-2 scale: ***Parent informant***	*raw score*	*scaled score*	*percentile*
A. speech	6	4	6
B. syntax	9	2	2
C. semantic	7	5	6
D. coherence	8	5	8
E. inappropriate initiation	15	5	5
F. stereotyped language	7	5	6
G. use of context	7	6	12
H. nonverbal	7	4	5
I. social relations	9	2	1
J. interests	14	4	1
General Communication Composite - GCC		36	2
Social Interaction Deviance Composite - SIDC		-1	
Consistency Check		1	

	raw score	*standardised score*	*standardised score CI**	*percentile*	*age equivalent*
NVIQ: Ravens	12	60	<60-70	0.4	<4y
Sentence Comprehension: ACE	19	6	1-9	5	
Naming: ACE	10	5	2-8	5	
Sentence Recall: CELF4	37	7	6-8	16	

Assessment observations

Ravens: *CH14 kept tapping on their cheek as if 'thinking'*

Sentence Recall: *CH14 found the language understanding and expression easy, though at first sight, she was failing the basic statements.*

5.2.28 CH14 narrative summary

CH14 was a girl attending a full-time mainstream classroom. She had been receiving SLCN interventions for more than 12 months.

Language and communication

DLD was indicated by the combination of GCC (= 36 scaled) and low language battery scores. CH14's speech difficulties were noticeable due to her incorrect pronunciation of some letters. She had fronting difficulties and would say '*tome up*' instead of '*come up.*' It took me some time to get used to her speech.

> ***CH14:*** *Detause ((because)) it's where we play our setret ((secret)) day ((game?)) with Ruby*
> ***R:*** *Ahaa. Your secret day?*
> ***CH14:*** *DAME ((Game)) (.) Yeah (.)*
> ***R:*** *Secret who?*
> ***CH14:*** *Game, it's our se- (CH14_Friendship)*
>
> ***R:*** *And what do you really like about Mary?*
> ***CH14:*** *Ehm (.) (.) she dot ((got)) the londest ((longest)) hair in in stool ((school))*
> ***R:*** *I'm sorry?*
> ***CH14:*** *She's dot ((got)) the londest ((longest)) hair in stool ((school))*
> ***R:*** *She does what?*
> ***CH14:*** *(he) has the londest ((longest)) hair in [stool ((school))]*
> ***R:*** *[oh, she has] the longest hair in school!*
> *CH14: yeah*
> ***R:*** *Oh yeah, she does actually! (CH14_Friendship)*

Initially, CH14 had to repeat herself a number of times until I finally picked up what she was saying. Based on her reactions, e.g. raising voice when repeating the same word, meeting and talking to new people must have been frustrating. At the same time, CH14 behaved very well. She was polite, asked for permissions, and generally was nice to work with.

Psychosocial attributes

CH14 scored at the 0.4th percentile in Ravens although looking engaged with the task. She passed some ToM stories that involved 1st and 2nd ToM.

CH14 had a very smiley personality. She did a lot of pretend play with her friends. She was creative in coming up with different games involving role play, e.g. Puppies, Fisherman Fishermen, or a Secret Time machine game about trees in the yard being portals to different time. Overall, the smiles and creativity revealed a playful personality.

CH14F shared that CH14 could get annoyed, upset, and stopped talking to peers if things/games did not go her way. CH14F used to approach CH14 but learned to leave her some space. Usually, CH14 came back to class on the next day and behaved as if nothing happened.

Behaviours

In class, CH14 was quiet and listened to instructions. She did not engage in teacher's open questions to class and did not attempt to answer any of them. This could have been linked with her learning difficulties, especially reading and writing.

CH14 was very helpful and assisted with collecting books and tables, helped with tidying up the classroom. Her behaviours were not corrected when it did not disturb others, e.g. CH14 remained sitting on the carpet when everyone went back to desks, walked over to window.

CH14 was sitting at the table with children that needed help. TA gave one-to-one support and CH14 was engaged. On one occasion, TA stayed with children at the desk for the entire play break to finish the task.

Peer interactions

CH14 met with her classroom friends on playdates and visited each other's houses. CH14 had more complex friendship experiences as other children in class occasionally joined her play with CH14F. CH14 portrayed a number of peers in their art-based activities (Figure 5.14).

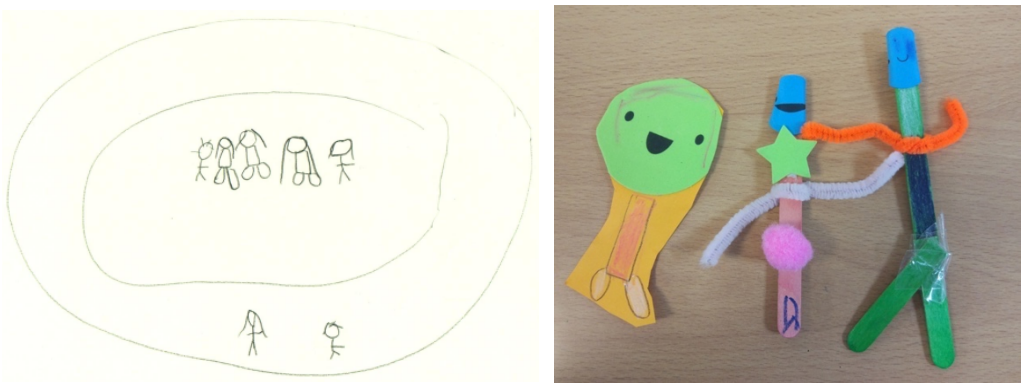


Figure 5.14 Circle of Friends and Friends by CH14

However, CH14 did not always like it when these peers were around. One of these peers talked to their teacher a lot about what children do and another one was always trying to find out everything. CH14 found both peers annoying. CH14 was protective of CH14F.

> ***CH14:*** *CH14F is the best friend.*
> ***R:*** *Yeah? How do you know that she is your best friend?*

CH14: *Detause ((because)) she always stood up for me*
R: *She stands up for you. Can you tell me a story when it happens?*
CH14: *((Hx)) ((sighs)) Ehm (.) (.) There's no*
R: *Mhm, you can't remember?*
CH14: *((shaking head as if no))*
R: *Okay. And you said that you had like a fight with boys [last year?]*
CH14: *[yeah]*
R: *Yeah? So you had to fight for Mary, yourself*
CH14: *Yeah*
R: *How did you feel then? I mean how was it?*
CH14: *Brave*
R: *Brave! Okay. Were you scared but you-*
CH14: *No*
R: *Okay. So what did you do? How did you stand up for her?*
CH14: *Ehm, we just had the fight.*
R: *Okay. But you were arguing or did you like physically fight?*
CH14: *We just physically fight.*
R: *Oooh, oh my goodness! Did you get hurt?*
CH14: *No*
R: *Oh good. Did anybody get hurt?*
CH14: *No. Mary did ((@))*
(CH14_Retrospective_Validation)

CH14F revealed more insights about their friendship with CH14 and the two other peers. CH14F liked all of them but sometimes had to resolve conflicts between CH14 and other friends. CH14F did not like to be the judge. CH14F was protective of CH14, and did not reveal to other friends about helping CH14 with reading.

5.3 Case studies summary

The case studies are now summarised following the key within-child characteristics of the Redmond and Rice (1998) social adjustment model: language and communication, psychosocial attributes, and behaviours. Although separating these features is not always clear-cut, the most noticeable characteristics of children are captured under respective areas. The ambiguity between language, psychosocial attributes, and behaviours is most visible in those children who had additional needs and displayed autistic like behaviours (CH6, CH8, CH11).

5.3.1 Language and communication of participating children with DLD

The linguistic and communication profiles varied across the children. They all experienced difficulties, which, as per my non-specialist observations, were not readily apparent in most children. Furthermore, their friends did not generally report noticing language and communication difficulties and this finding is discussed in Chapter 7. Interestingly, friends

did not comment on even the obvious speech difficulties, e.g. lisps (CH12), or fronting (CH14). Friends mentioned limited communication in the minimally verbal CH1 and CH3. The friend of CH14, who had dyslexia, reported on CH14's reading difficulties and was actively involved in helping CH14.

Disconnected speech and fixating on their own stories were observed in CH6 and CH11. This could create the impression of disengagement in interaction. CH13 mixed up her stories, which were confusing to follow. This could result in disinterest of CH13's communication partners. On the other hand, CH5, CH7, CH8, CH9, and CH10 were rather chatty and initiated conversations. It is interesting that most of the 'talkative' children were from the SSLD class. This might have been caused by higher and more regular presence of adults in their school experiences (SENCo, TA, SLTs, director of SSLD class), who were aware of children's language difficulties and encouraged children to communicate. Children from the SSLD class had very limited opportunities to interact with peers from mainstream settings and thus, less exposed to potential communication breakdowns and adverse reactions from peers.

5.3.2 Psychosocial attributes in participating children with DLD

Creativity was highly recognised by friends as a positive characteristic in children with DLD. Coming up with news games, pretend play, or dance routines was effective for connecting with friends (CH4, CH7, CH8, CH9, CH10, CH11, CH14). However, classroom peers did not list all 'creative' children as their most liked peers. For example, CH11 was 'rejected' according to the sociometric nominations, and that could mean that only their friend recognised and appreciated the child's creativity. Peers further appreciated being flexible (CH9) and not fixed to own game preferences (CH8). Nevertheless, the most 'creative' children with DLD were among the most preferred play partners and received the highest best friend nominations.

CH8, CH9, CH11, and CH13 displayed confidence and self-esteem but this was not conclusively reflected in their sociometric results. Self-concept and higher social awareness however indicated that CH4 and CH12 were popular and yet happy to take a break from their friends and to be independent. In contrast CH8 and CH13 showed good awareness of self but their immersion in themselves may have created disconnection with peers. CH8 and CH13 were among the top scorers in least liked friends from the sociometric nomination task.

Possible explanations could be that CH8 was overly critical of others and CH13 had regular conflicts in their small group of friends.

Being part of a small group of friends created rich experiences for developing social understanding in CH12, CH13, CH14. Nevertheless, CH13 and CH14 did not pass the ToM assessments. This brings into question the traditional social cognition batteries that often include ToM task and are used in studies with children with DLD (Andres-Roqueta et al., 2016; Farmer, 2000). Although ToM tasks are presented visually and use stories, children with DLD may not identify with or follow the narrative. More naturalistic and experience-based assessments could therefore be more representative of children's true understanding of others.

Lyons and Roulstone (2017) and Marton et al. (2005) considered subjective wellbeing as a contributor to the peer relationships of children with DLD. Learning about children's feelings turned out to be problematic for two key reasons. First, participating children with DLD had a very limited vocabulary to express abstract emotions and reflections. Answers to most feeling related questions were short and expressed mostly using good, sad, annoying, and cross. Second, almost all children answered to the initial friendship interview question 'How I feel about my friends in school…' with 'good' or pointed at the smiley face on a 3-point Likert-scale. Only a couple of children with DLD elaborated on their answer. Eliciting the subjective wellbeing experiences from the current data will need a more informed analytical approach, which was not feasible to take on within the limits of the current project. Thus, wellbeing was not pursued as a topic. Instead, the project continued with examining the friendship data, which was more readily available and uncovered crucial areas for analyses presented in Chapter 6 and Chapter 7.

5.3.3 Behaviours of participating children with DLD

The majority of participating children with DLD displayed prosocial behaviours. The less actively interacting ones were participants with autistic traits. Caring and protective behaviours helped CH5, CH7, CH9, CH10 and CH14 connect with their peers. At times, CH10 could be perceived as noisy and taking over games. CH2 displayed prosocial behaviours by helping peers with schoolwork or apologising for any misunderstandings they might have caused; although it was not clear if this was due to language, jokes, or behaviours.

The least verbal children, CH1 and CH3, looked for connection with peers by acting silly. However, 'goofing about' behaviours could be misinterpreted or misunderstood. This is a

high-risk strategy, considering that their extensive language difficulties may prevent them from clearing up any misunderstandings.

5.4 Summary

This chapter used a descriptive multiple-case study approach (Yin, 2018) to summarise the key features of social functioning in participating children with DLD. The rich case descriptions built on the Redmond and Rice's (1998) SAM model explaining links between language and behaviours, and incorporated some of the key within-child characteristics previously identified in Chapter 4. Furthermore, the current chapter fostered the child-centred approach, which is endorsed throughout this research project, capitalising on the direct interactions with children, reflections and engagement in participatory research with children. Actively interacting with children and engaging in reflections led to selecting the cross-themes for further systematic analyses: the friendship conceptions of children with DLD and the peer perceptions of children with DLD as friends. Next, both themes are examined and presented as academic papers in Chapter 6 and Chapter 7, respectively.

Chapter 6 Friendship concepts in children with DLD

Chapter 6 investigates the friendship concepts in children with DLD. Friendship interview data was collected during one-to-one meetings and analysed using Selman's (1979) interpersonal understanding manual. The results reveal social understanding levels in participating children with DLD within the context of friendships.

Chapter 6 is drafted as a research paper, which will be submitted to the International Journal of Language & Communication Disorders (IJLCD), run by the Royal College of Speech and Language Therapists.

Abstract

Purpose: Children with Developmental Language Disorder (DLD) are at risk of peer relationship difficulties. In this qualitative study, children with DLD describe their own ideas about making friends. We map these concepts to children's overall development of interpersonal understanding. Additionally, children with DLD share their own strategies for making friends. The participating children with DLD attend enhanced provision, specific speech and language class, or mainstream classroom. Thus, we gain insights across different classroom settings.

Methods: We conducted multiple, art-based interviews with 14 children with DLD at the age of 6-8 years. We used framework analysis and Selman's (1979) interpersonal understanding assessment to analyse the data.

Results: The understanding of friendship formation in children with DLD ranged from conceptualising friendship in terms of physical presence to an understanding of friendship as mutual sharing. Children's interpersonal understanding varied across areas of friendship formation, and their ideas about a good/bad friend represented the lowest developmental stage. Participants from the mainstream classroom achieved the highest stages of interpersonal understanding. Children with DLD did not mention their language abilities as a barrier to making friends.

Conclusion: This study is the first to learn directly from children with DLD about their conceptions of friendship formation. Children's low understanding of a good/bad friend points towards their susceptibility to false friends, which however needs further empirical validation. We also learned that children with DLD do not pay attention to their language difficulties when making friends, which raises questions about the ways diagnoses are shared with children.

Friendship is…. "*when we all play together*." Exploring concepts of friendship formation in children with Developmental Language Disorder

6.1 Introduction

Friendships and peer relationships foster social and emotional development in children by providing unique, power-balanced and interactive contexts, which children can freely join or leave (Bukowski et. al., 1998; Rubin et al., 2011).

Experiencing primary difficulties in language development places children with Developmental Language Disorder (DLD) at a disadvantage in peer interactions. Affecting 7-8% of children, DLD is not linked with any other neurodevelopmental, hearing, or global intellectual disorder (Frazier Norbury et al., 2016). Associated emotional, social and behavioural difficulties make diagnosing DLD difficult and prevent affected children from receiving language targeted interventions (Cohen et al., 1998; Reilly et al., 2014). Missed DLD diagnosis is a risk factor to literacy and education, and through associations with similarly disengaged peers, could be a reason for the overrepresentation of adolescents with unrecognised language difficulties in the justice system (Bryan et al., 2015; Gifford-Smith et al., 2005; Winstanley et al., 2018).

The evidence of peer relationships difficulties shows its onset in childhood. Compared to their typically developing (TD) peers, children with DLD have fewer friends, lower quality friendships (Durkin & Ramsden, 2007; Fujiki et al., 1999a) and report increased bullying rates (Conti-Ramsden & Botting, 2004; McCormack et al., 2011). Although they join peer groups similarly to their TD peers, children with DLD take extra time to approach peers and in an 'onlooker' play – watching and commenting on peer play without joining in (Liiva & Cleave, 2005). Even though children with DLD have a risk of peer difficulties, they do display prosocial behaviours and motivation (Fujiki et al., 2001; van den Bedem et al., 2019). It is therefore important to explore their own perspectives on friendships; Who do children with DLD consider as a friend? And what motivates them to make friends? We have limited understanding of how children with DLD conceptualise friendship, as many studies to-date have not consulted children directly.

A recent systematised literature review of peer relationships studies of children with DLD identified just four articles reporting findings from research directly engaging children via

interviews and art-based methods (Janik Blaskova & Gibson, 2021). Though peer relationships were not the key goal of their explorations, all reports confirmed peers as crucial agents in the daily experiences of children with DLD (Lyons & Roulstone, 2018; Markham et al., 2009; Merrick & Roulstone, 2011; Roulstone & Lindsay, 2012). These studies did not explore how children with DLD conceptualise friendship. Understanding their concepts of friendship will lead us closer to fully grasping the mechanisms underlying their difficulties in peer relationships and friendships.

From the developmental perspective, friendship concepts reflect children's social-cognitive maturity as they manifest the levels of understanding others and the roles that friends play in children's lives. Indeed, task-based studies and self-reports investigating why children with DLD are less likely to succeed in establishing friendships indicate empathy and social cognition as mediators between poor language and poor peer relationships (e.g. Andres-Roqueta et al., 2016; van den Bedem et al., 2019). Although increased language difficulties are associated with lower popularity (Laws et al., 2012), language is not the only predictor of poor peer relationships in children with DLD (Andres-Roqueta et al., 2016). This suggests that social understanding may be linked to friendship concepts in children with DLD.

6.1.1 Friendship formation

Developmental theories of social understanding include theoretical and empirical models, outlining benchmarks for determining social-cognitive maturity in the context of peer relationships. Selman's (1980) model of social understanding maps relationship development with stages of understanding others and the self. Bigelow et al. (1996) propose a behavioural-based model, highlighting the importance of social rules and applying them within different relationships, including friendships. Conversely, Hartup's (1996) model involves mutual affection, and friendship develops with the ability to differentiate between surface interaction and deeper reciprocity in relationships. Although Hartup (1996) and Bigelow et al. (1996) include important aspects of relationships (e.g. proximity, similarity), we have selected Selman's model for the current study as we judge that it presents the best articulated framework of social-cognitive understanding within friendships (Parker et al., 2015).

Recently, a study with typically developing children confirmed the stages of Selman's model (Marcone et al., 2015). Another study with non-typically developing children experiencing learning difficulties showed significantly lower performance to age-matched peers $t(40) = 3.32$, $p < .01$ and differences in their fluctuation across stages (Kravetz et al., 1999).

Similarly, earlier clinical studies suggest that social understanding does not develop globally across all areas but the stages of children's conceptions vary, e.g. children can reach higher developmental stage in understanding the concept of trust between friends while holding lower-stage concepts about jealousy in friendship (Selman & Demorest, 1984; Selman et al., 1977). Therefore, narrowing down our exploration to the *Friendship formation* issues will support a detailed understanding of the fundamental ideas that children with DLD hold about making friends.

6.1.2 Study aims

This study aims to shed light on how children with DLD understand friendships. The focus on *Friendship formation* will help understand why children with DLD believe that friends are important, how they make friends and who they consider as a good or bad friend. Investigating the concept of a bad friend will be added to Selman's original sub-issues of *Friendship formation* (motivation, mechanisms, ideal friend) to use contrast and support children's reflection on abstract notions and balance the enquiry.

We address the following research questions:

1. What concepts of *Friendship formation* do children with DLD hold?
2. What do *Friendship formation* concepts of children with DLD reveal about their levels of understanding of friendship motivation, mechanisms for making friends and what constitutes a good and a bad friend?
3. What strategies for making friends do children with DLD follow and propose?

6.2 Method

The current study draws on a data from a larger qualitative research project concerning peer relations and wellbeing of children with DLD. In the present study, we focus on the data relating to children's understanding of friendships.

6.2.1 Ethical approvals

The study complies with the ethical guidelines of the British Education Research Association (BERA, 2018). The Cambridge University Faculty of Education and the Health Research Authority in the UK approved the study. We obtained an informed parental consent prior to meeting participating children. Before one-to-one meetings, we sought children's informed

assent and described the study goals in a child-friendly format and used Communicate-in-Print (Widgit software, 2018) symbols to support written text.

6.2.2 Recruitment procedures

We used a purposive sampling approach to recruit children between the ages of 6-8 years with DLD and with English as the primary language of education. Inclusion was conditional upon scoring below 55 on the Global communication composite score AND 0 or above on the Social-interaction deviance composite of the Children's Communication Checklist-2 (Frazier Norbury et al., 2016); OR scoring 1SD below the mean on the sentence recall subtest of the Clinical Evaluation of Language Fundamentals, 4th Edition (Semel et al., 2006) AND sentence comprehension subtest of the Assessment of Comprehension and Expression 6–11 (Adams et al., 2001). We aimed to include boys and girls and children from different educational settings. We did not target children with a specific ethnic, socio-economic, or any other background. We excluded children outside of the 6-8 years of age, or with primary difficulties other than language development. We approached parents, educators, speech and language therapists and third sector organisations in the UK and Republic of Ireland with information about the study.

6.2.3 Data collection

We collected data in children's schools, except for one participant, with whom a number of meetings were held in their house. When commencing meetings, we reminded children that they could interrupt the session and withdraw from the study at any stage. Additionally, we consulted teachers about children's immediate wellbeing before the meetings, and stayed tuned to children's behaviours and reactions. We stopped a couple of meetings where participants displayed additional emotional and behavioural difficulties due to them feeling tired or loosing attention. Most of the time, children enjoyed the activities, stayed engaged and looked forward to our next meeting. We had multiple data collection methods at hand to flexibly combine art-work with interviews.

6.2.4 Conceptual framework

We selected the Selman (1971, 1977, 1980) Social Understanding model as a framework for the current study. This framework maps onto the Interpersonal Understanding Assessment (Selman, 1979) consists of a social-cognition map of interpersonal understanding across four domains: individual, friendship, peer group, and parent-child relationships. This assessment

is designed for research and clinical use and consists of a stimulus story vignette about a relationship dilemma, followed by series of open questions on relational topics. Children's responses are scored using a manual, assigned to respective developmental stages and also used qualitatively to describe the child's awareness of interpersonal relationships. The developmental stages of friendship domain and the issue of *Friendship formation* are described in Table 6.1.

Table 6.1 Stages in developing friendship and *Friendship formation* concepts, based on Selman (1979)

Stages	Age	Friendship domain	Perspective-taking	***Friendship formation* concepts: *Why & how friendships are made, the ideal friend***				
				Motives	***Why?***	**Mechanisms**	***How?***	**Ideal friend**
0	3-7 years	Momentary physical playmate	Undifferentiated/ egocentric	Interact in play		Proximity & propinquity		Closeness of physical appearance & functional activity
1	4-9 years	One-way assistance	Subjective/ differentiated	Friends do overt activities that the self wants done		Tuning into the likes / dislikes / preferred activities of a peer		Knows what self likes doing and will do it with the self
2	6-12 years	Fairweather cooperation	Reciprocal/ self-reflective	Needs company & to be liked, social interaction		Coordinate context specific likes & dislikes		Reveals inner or true feelings, does not present a fake image
3	9-15 years	Intimate-mutual sharing	Mutual/ third person	General mutual support upheld over a period of time		Develops through shared experiences over time		Complementary personality, 'good person' to rub off
4	12 to adulthood	Autonomous interdependence	In-depth/ societal	Sense of personal identity through interpersonal relations		Builds up through series of stages, parallel with ontogenetic development of global stages		Relative concept, someone with a personality compatible with the self, empathic, sensitive

Selman's (1980) mapping considers global development stages and levels of individual issues development within these stages. This means that for example within friendship, a child's development can vary across issues. A child can be jealous when their friend prefers playing with another peer (Stage 2, Jealousy domain) and yet appreciate their best friend for their physical skills, e.g. fast running (Stage 0, Friendship formation domain).

6.2.5 Interviews

Recognising multiple ways for meaning making, we conducted a series of interviews using a multimodal approach. We drew on Kress and van Leewuen (2006), who expand the original social semiotic notion of Halliday (1978) and emphasise visual representations alongside language in the communication and interpretation of meaning. Unlike in purely traditional interviews that heavily rely on language, we combined art as one of the modalities to facilitate children's responses. However, we recognised that reluctance to draw, scribbling, writing, and, inconsistencies between children's drawings and verbal responses could create risks to our data interpretation (Scherer, 2016). We addressed these potential threats by demonstrating and navigating children through art activities, exploring their work through questions, and providing different visual media options in case they preferred using playdough, stickers, or art and craft items. McLaughlin and Coleman-Fountain (2018) used some of these strategies with young people with disabilities impacting their speech, and other physical and learning capacities, and successfully elicited participants' voice in interpreting their social lives. Bock (2016) highlights children's freedom of choice which strengthens their agency in seamless shifting across modalities.

6.2.6 Interview procedures

As mentioned above, the present study is part of a larger project designed to address different topics. For the broader project, we carried out individual child interviews over 3-6 meetings, each lasting from 10-30 minutes, depending on children's attention span and individual needs. The initial plan clearly separated interview schedules about friendship concepts, friendship experiences and school wellbeing into distinct sessions. In reality, however, we used the schedules flexibly and according to children's mindset, attention and interests during each interview. This accommodating approach essentially facilitated the engagement of children and supported their communication needs.

In some cases, we sought further clarifications about friendship concepts in the final meeting validating preliminary findings. As a result, we collected data relevant to friendship concepts

in 1-4 sessions per child. For simplicity, we refer to this as the 'friendship concepts interview' data.

6.2.7 Combining visual methods with the interview content

We utilised visualisation and art to encourage children reflect upon their friendships and express their ideas. Children could use crayons, stickers, play dough, coloured papers, and various art and craft items freely. The first friendship interview started with a warm up activity. We invited children to complete a very simple evaluation of 'How I feel about my friends' in school, an adaptation of the 'How I feel about my talking activity' used with children with SLCN (McLeod, 2018). Children could select a smiley face, draw a new one in the empty circle or point at the question mark, meaning that they 'don't know.' All participating children indicated a happy face in different ways. Many would colour in the happy face (Figure 1 left) and CH12 wrote their feelings "Happy, paly nicy ((play nicely))" in the empty circle (Figure 6.1 right).

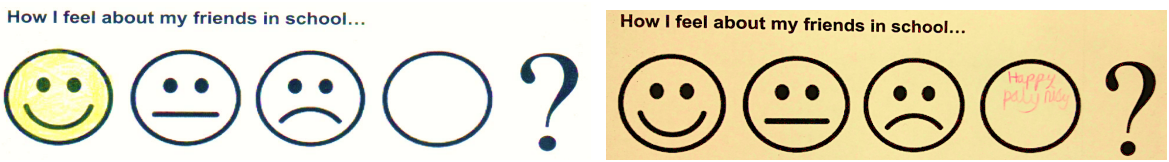


Figure 6.1 Responses of CH7 and CH12 to an interview warm up activity

Next, drawing the 'Circle of Friends' mapped children's peer relationships in classroom (Figure 6.2).

Figure 6.2 Circle of Friends by CH2

The researcher demonstrated the activity by drawing two circles and herself in the middle. Talking through what they were doing, the researcher added their friends to internal circles and outside of the circles depending on how close and how often they played with their classroom peers. Children were then invited to draw their own circle of friends, revealing the closeness to individual peers in their class. Children's drawings and responses indicated their perceptions of peers as friends.

In the next art-based activity, we invited children to draw or make their classroom friend(s). They were asked about the drawing, e.g. *Who is in the drawing? Do you like playing with them?* (McLeod, 2018), and a series of friendship quality questions (Dunn et al., 2002). While the friendship quality questions and description of art focused mainly on children's friendship experiences, some of their answers and particularly their art-work revealed the concepts they hold about friendship formation.

We interpreted the Circle of Friends drawings as the degrees of friendships that children hold. Some children drew peers across all the circles, suggesting concepts beyond the momentary play activity in stage 0. Others separated peers completely, drawing them either in the inner circle or outside of the circles. We probed friend drawings and art-work to elicit children's friendship concepts. For example, we asked about friends holding hands or the symbolic representations (crosses, hearts) to get more descriptive responses about children's conceptions of friendship.

The *Friendship formation* interview generated majority of friendship conceptions data. We based the interview schedule on the *Friendship formation* interview but for the purpose of the present study, we omitted the friend's dilemma proposed by Selman (1979). Without the original filmstrips, the dilemma would place additional cognitive load for children to understand a hypothetical story without supporting their language needs. To gain good quality insights from children, Selman (1980) recommends changing the hypothetical, general, or personal contexts of questions as needed. Therefore, as outlined above, we started with personal context and used visual methods modality described earlier to ease children into talking about their own friends and experiences. Asking about their artwork supported children in expressing their abstract concepts of friendships and moving to more general context.

Children could continue using the art during the traditional interview modality - questions and answers. We focused on friendship formation, reducing the questions to four main ones

(Table 6.2), which allowed for extra time to ask supplementary probes and gave children time to express themselves according to their abilities.

Table 6.2 *Friendship formation* interview (Selman, 1979) with added probes

Question	Supplementary probes
Why are friends important? *Why does a person need a good friend?*	*Is there anything else?*
Is it easy or hard to make a good friend? Why?	*Why is it sometimes ___ (the opposite)?* [1]*How do you do it? How do you make friends?* [2]*How else can children make friends?*
What kind of person makes a good friend?	*What else makes them a good friend?* *Could you tell me more?*
What kind of person would you NOT want as a friend?	*Why is that important?* *What else would you like this person to be like or do?*

We used Selman's original questions and added [1-2] probes to answer our research question 3. We kept reverting to these questions in later meetings with children, who did not answer in the first meeting.

6.2.8 Reflective notes

After each meeting with participating children, we took notes capturing our reflections about children's answers and artwork. When analysing the friendship concepts data, we included notes pointing at specific social understanding stages that individual children hold, e.g. abstract thinking, physical proximity.

6.2.9 Procedures for the analysis

Drawing on Selman's (1979) conceptions of friendships, we conducted a two-level analysis of 54 documents including the verbatim transcribed interviews, artwork and reflective notes. At first, we gained the big picture of children's *Friendship formation* concepts using framework analysis (FA) to organise our data and to create themes. FA offers a systematic approach to qualitative data analysis performed in five steps:

Data familiarisation: getting familiar with the data, noting any re-occurring themes and individual differences,

Identifying a thematic framework: coming up with codes to capture the essence of the data, merging codes into categories and themes;

Indexing: assigning codes to data, assigning numbers to categories and themes;

Charting: summarising the data and organising the summaries in chart formats;

Data mapping and interpretation: finding patterns and making sense of data (Iliffe et al., 2015; Parkinson et al., 2016).

As displayed in Figure 6.3, we added the 'Developmental Stages' step to the framework analysis procedure.

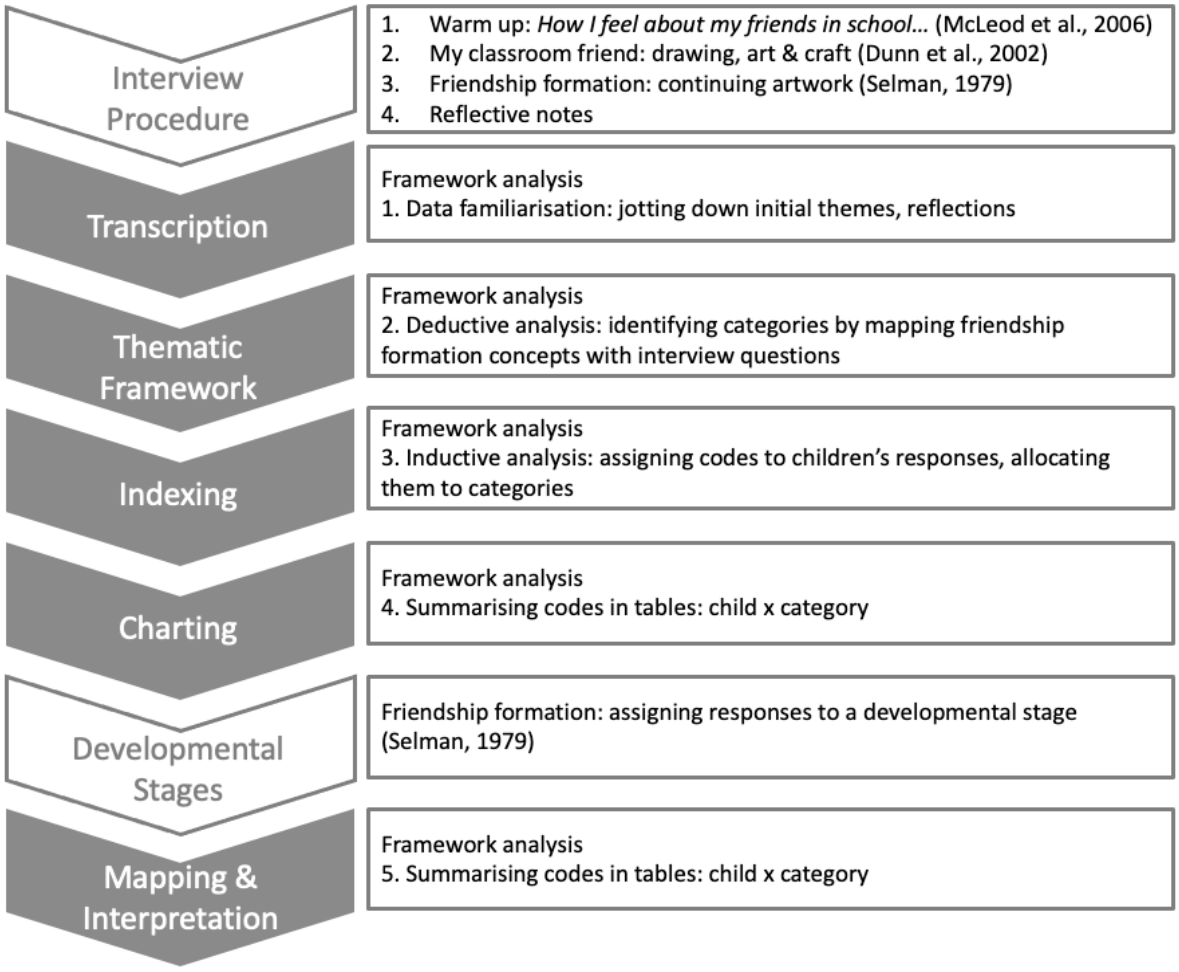


Figure 6.3 Friendship interview procedure and data analysis steps

Our data familiarisation started during data collection and continued when the interviews were transcribed in verbatim. Initial themes and reflections were jotted down. Next, we identified a thematic framework for the broader study, and this included the 'concepts of

Friendship formation' as one of the major themes, which is analysed and reported in the present paper.

Our categories in the *Friendship formation* theme map to the Selman's *Friendship formation* concepts and interviews as detailed in Table 6.3.

Table 6.3 Mapping *Friendship formation* concepts with thematic framework

Concepts	Interview questions	Framework categories
Motives	*Why are friends important?* *Why does a person need a good friend?*	2.01 Purpose of a friendship
Ideal friend	*What kind of person makes a good friend?*	2.02 CwDLD good friend
Bad friend	*What kind of person would you NOT want as a friend?*	2.03 CwDLD bad friend
Mechanisms	*Is it easy or hard to make a good friend? Why?* [1]*How do you do it? How do you make friends?* [2]*How else can children make friends?*	2.04 CwDLD making friends strategies

[1-2] probes added to answer the research question 3

We added the 'Bad friend' concept to separate answers to Selman's original interview question about 'a person NOT wanted as a friend' from an 'ideal/good' friend responses. This distinction helped reviewing good and bad friend concepts separately. We further added more specific probes about 'Making friends strategies' to align with our research question 3 and analyse these data more closely. Having the framework categories was the deductive part of our framework analysis. We then moved onto indexing and analysed our data inductively.

Indexing helped code and organise the data for further analysis relating to our specific research questions. We assigned codes to children's responses, including their art-work, and reflective notes. Our categories, codes and data examples for the theme "concepts of *Friendship formation*" can be seen in Table 6.4 below.

Table 6.4 Analytical framework of *Friendship formation* concepts

Theme	Categories	Codes	Data (examples)
2. Concepts of friendship formation	2.01 Purpose of a friendship *(Motives)*	To play To be happy, not alone Friends protect from bullying Helping, caring Team up, be faster To make more friends Doing things together Don't know, no response	R: Why do you like Oliver? CH1: Be-frie-nds R: And what do you do together? CH1: Play
	2.02 CwDLD good friend *(Ideal friend)*	Nice, kind Fun to play with Comes up with games Helping, caring Always says 'yes' Gives specific names of peers Comes to my house Lives nearby Has skills – smart, fast Decide if you want to be good/bad friend N/A, don't know	R: And can you tell me, what makes a good friend? Who is a good friend? CH13: Me and Caithlyn and Ilona R: Okay CH13: messing around (anymore) R: So you're not messing around? CH13: No R: And, what kind of person would you like as a friend? CH13: Caithlyn and Ilona R: And what kind of person you would NOT want as a friend? (.) (.) CH13: Hmm. (.) (.) ((H-Hx)) Hmm. I do not actually know (t) R: So what kind of person you would want as a friend? (.) CH13: Hmmm… (.) (.) Thinking, I'm still thinKING R: Okay CH13: ((H)) <xxxx> ((surprise, excitement))
	2.03 CwDLD bad friend *(Bad friend)*	Pushes over, pulls hair Plays naughty Not nice, bully Behaves badly, does not listen teacher Excludes others Mean to each other	R: Mhmm. And, what kind of person would you NOT want as a good friend? As a friend? CH11: Mmm. Jack. R: Jack? CH11: Yeah R: Why? CH11: Because, yesterday, at lunchtime, wat- I've got to show you R: Okay CH11: ((Unties shoes)) R: He took his shoes off? CH11: I di- he did it to me. He took my shoe off put they're in, (a hot tub,) hot everywhere R: So, can I also ask you, just going back [to your] CH11: [Okay] R: friends, how do you, how can you say if someone is playing mean? CH11: Erm, I, if so, if I was fighting R: Mhm

		CH11: I can, I know they're being MEAN because they pushing, shoving
2.04 CwDLD making friends strategies *(Mechanisms)*	Play with children Ask if you can join the game Invite children to join a play Introduce self Just ask, 'do you want to be my friend?' Ask a teacher Pass a favour Make some, then many, then pick some Apologise if bump into someone then become friends Point, start with word by word, stand nearby Don't know, forgot	R: Okay. And is it easy or hard to make a good [friend?] CH10: [E]asy R: Yeah? How do you do it? CH10: Em, you just if they wanna be my friend, then they just say 'yes' R: Okay, what if they say no? CH10: Em, they, em, we just say 'okay' and we just go and find another friend. And I said "you, anyone can join" R: Mhmm CH10: And I just let them just join R: Okay CH10: That's how, that's em, that's how we just be friends.

We then moved to charting and summarised the findings in a matrix, placing categories in rows and individual children's data in columns.

At this stage, we added the second level of analysis to answer RQ2 to reveal how children's *Friendship formation* concepts corresponded to their levels of understanding motivation for and process of making friends, and good/bad friend characteristics. We assigned each response with a single developmental stage score 0-4 using general principles and sample answers outlined in the Interpersonal Understanding Assessment, friendship domain manual (Selman, 1979). The guiding principle lies in children differentiating between the stages of momentary physical interactions (Stage 0), one-way assistance (Stage 1), fairweather cooperation (Stage 2), intimate mutual sharing (Stage 3), and autonomous independence (Stage 4) (Selman, 1979). To illustrate, under Stage 0 – momentary physical interaction, responses to 'Why are friends important?' relate to principles of children's ability to a) respond to the general question as opposed to a specific case and b) distinguish between

friend and the actual activity. Cyclical responses similar to the below examples demonstrate that a child keeps reverting to their specific friend and does not perceive their friends beyond shared playful activities.

> *(Why is it important for you to have a friend like Michael?)*
> *Because I like to play with them.*
> *(Why do you like to play with him?)*
> *Because they are my friend*
> *(And why is he your friend?)*
> *We play games*
>
> *(Why are good friends important?)*
> *I have millions of them.*
> *(Why are friends important for people to have?)*
> *Because they like me.* (Selman, 1979, p. 120).

The scoring manual offers similar guidelines for each aspect of *Friendship formation* (motives, mechanisms, ideal friend qualities) and at each developmental stage. Stages give qualitative information about the developmental level of a specific *Friendship formation* concept – category. Mixed stages are possible and indicate that children may reach different developmental levels of their perspective-taking with a specific aspect of *Friendship formation* – motives, mechanisms, ideal/bad friend.

When interpreting data, we considered the developmental stages within and across the responses of individual children. We examined the variability of Selman's (1979) *Friendship formation* issues - motives, mechanisms, ideal and bad friends - to understand children's ideas about making friends in detail. We reflected upon the missing or unclear answers and interpreted them in relation to the stages assigned to other aspects of friendship concepts in an individual child. We further considered the missing or unclear answers in relation to specific concepts where they were missing and made implications about the nature of the concept. Additionally, we considered children's age and school settings when interpreting the results.

6.2.10 Trustworthiness and credibility

In our qualitative enquiry, we strove for achieving trustworthiness and credibility of data and the analytical process. We employed data triangulation and used multiple methods to collect the data. Children's art-work complemented interviews about the concepts they have about friendships and served as a prompt to question and validate children's representations of their friendships and friends. We conducted a number of interviews to build rapport with children

and give them opportunities to express their concepts on different occasions. If needed, we encouraged children to elaborate on previously presented examples that were unclear and so confirmed our interpretations or clarified discrepancies.

We used computer-assisted qualitative analysis and conducted transcriptions and data analysis using MAXQDA Analytics Pro 2020.

6.2.11 Researchers' background

The first author is a trained and experienced guidance counsellor and has experience in conducting interviews with children. Knowledge of children with language impairments and practice in working effectively with this group was gained via specialist training, research piloting, reflective practice and by supervision from the second author, who is an experienced and qualified speech and language therapist alongside being an academic in the field of communication disorder.

6.3 Results

We recruited 14 children with DLD (n = 14) to the study. We present participants' characteristics in Table 6.5.

Table 6.5 Participants' characteristics

Child ID	Gender	Age in years	Yrs since arrival to the UK/ROI	Languages in order most spoken at home	Ravens Standardised	CCC-2 GCC[1] Scaled score	CCC-2 SIDC[2] Scaled score	School settings
CH1	M	8.42	8	Hungarian, English	125	35	17	Enhanced Provision
CH2	M	7.86		English	125	46	9	Enhanced Provision
CH3	M	7.23		English	95	27	15	Enhanced Provision
CH4	M	8.9		English, Polish	80	43	17	Mainstream Class
CH5	F	7.97	6	Polish, English	115	48	9	SSLD[3] Class
CH6	M	7.77		English, Krio	105	42	13	SSLD[3] Class
CH7	F	6.99		English, Tagalog	125	52	17	SSLD[3] Class
CH8	M	7.47		English	80	45	-7	SSLD[3] Class
CH9	M	7.15		English, Bengali	90	54	13	SSLD[3] Class
CH10	F	8		English	70	29	0	Mainstream Class
CH11	F	8.78		English	<60	30	18	Mainstream Class
CH12	F	7.94		English	95	29	13	Mainstream Class
CH13	F	8.75		English	75	42	11	Mainstream Class
CH14	F	7.17		English	60	36	-1	Mainstream Class

[1]*General Communication Composite*
[2]*Social Interaction Deviance Composite*
[3]*Specific Speech & Language Disorder Class*

Participating children attended classrooms with different levels of language and communication support:

- Enhanced Provision: small-sized (8 children maximum), language supporting class and therapy in the morning; mainstream class in the afternoon;
- Specific Speech & Language Disorder Class: small-sized (8 children maximum), language supporting class and therapy full time for two years; shared assemblies and playtime with children from an adjacent primary school;
- Mainstream: standard class with individual pull-out speech-language therapy.

6.3.1 Concepts of Friendship formation

The data addressing our first research question concerning concepts of *Friendship formation* that children with DLD hold, comes from the researcher's notes, interview responses and art-work. We present the results in three subthemes – *the purpose of friendship*, *good and bad friend descriptions*. Next, we evaluate these concepts against Selman's stages of social understanding development. Finally, we depict children's strategies to make friends.

6.3.2 The purpose of friendship

Children with DLD differ from each other in their understandings of the purpose of friendship. Two children with DLD (CH5 and CH7) gave 'don't know' or unclear answers to *Why are friends important?* and *Why does a person need a good friend?* On the other hand, some children gave multiple answers. CH1 and CH3 state that they need friends to have someone to play with.

> ***R:*** *Why do you need a friend?*
> ***CH1:*** *Pla-aay*
> ***R:*** *To play*
> ***CH1:*** *(uu) ((intonates as if 'mm,' confirming))*

Four children with DLD (CH6, CH8, CH9, and CH11) perceive friendship as a way to feel protected from others, team up to be better at skills (e.g. running) and CH13 sees friends as a gateway to make more friends.

> ***R:*** *...why do you need a friend? (.) (.)*
> ***CH13:*** *To make friends*
> ***R:*** *Hmm, to make more friends? Or*
> ***CH13:*** *((nodding))*
> ***R:*** *Okay*
> ***CH13:*** *To make more friends. ((sighs))*

CH2, CH4, CH10, CH12, and CH14 understand friendship as a means of not to be bored or miserable but to be happy. CH4 explicitly recognises the reciprocity in their motivation for making friends.

> ***CH4:*** *Being nice to each other, be ki(nd) and play with other people, (don't annoy) other people, play with them*
> ***R:*** *Mhmm*
> ***CH4:*** *(respond-ing) if they want to play.*

CH4 demonstrates thinking beyond the concept of self by showing awareness of mutual support in interactions. However, most children with DLD see friendship as a temporary play activity, companionship, or cannot express their friendship concepts which they may or may not have formed.

6.3.3 Good and bad friends

Before asking about good and bad friends characteristics, children were prompted to draw their best friends or friendship. Their work varied from very physical representations of their actual friend, physical proximity and holding hands to abstract symbolism of friendships. Examples of the artwork are displayed in Figure 6.4.

Figure 6.4 Artwork of best friends and friendship by CH4, CH9, and CH12 (respectively)

When prompted, children described their work in a more or less elaborative way. CH12 described their concepts of friendship in an abstract way. They expressed friendship with cross and heart symbols, and intertwined their hands when describing their work. CH12 demonstrated that friends can get distant or fall out by untying their hands. This representation tapped into the relativistic concepts of friendship.

Moving away from focusing on children's work, CH1, CH5, CH7, CH11, and CH13 had difficulties responding to interview questions about good friend characteristics. They

answered either “I don’t know” or started listed their classmates names. It seemed easier to describe their actual friends.

Across children with DLD, who answered the question what a good friend is, the descriptions included someone who is kind and supportive.

> ***R:*** *[…] And what makes a good friend? Who is a good friend?*
> ***CH2:*** *(Hx, Hx, Hx, Hx-H) Oh yeah, I (Hx, Hx, Hx, Hx, Hx-H) when he is kind(::)*
> ***R:*** *Mhmmm*
> ***CH2:*** *(Hx, Hx) and helps you(::)*

Another children with DLD highlights a good friend’s physical qualities as a means to achieve their goals.

> ***R:*** *…So, can you tell me what makes a good friend?*
> ***CH8:*** *Helping.*
> *[…]*
> ***R:*** *And what, what else? Is there anything else?*
> *[…]*
> ***R:*** *Teaming up? Why would you team up?*
> ***CH8:*** *‘Cause it will be a lot faster*
> ***R:*** *[Mhm]*
> ***CH8:*** *[‘Cause] he is smart.*
> ***R:*** *And can you tell me a story when you teamed up with somebody?*
> ***CH8:*** *Mmm, we actually are very good, we are very fast.*
> ***R:*** *Like when for example?*
> ***CH8:*** *So we’re fast (like) even before.*
> ***R:*** *Mhmm.*
> ***CH8:*** *Not even before my ot- my other friends (can’t) catch up to me and [CH9].*

Unlike with good friends, almost all children with DLD were able to describe a bad friend and referred to their own experiences with peers. A majority of their answers referred to physical behaviour.

> ***R:*** *Mhmm. And, what kind of person would you NOT want as a good friend? As a friend?*
> ***CH11:*** *Mmm. Jack.*
> *[…]*
> ***CH11:*** *Because, yesterday, at lunchtime, wat- I’ve got to show you*
> ***R:*** *Okay*
> ***CH11:*** *((Unties shoes))*
> ***R:*** *He took his shoes off?*
> ***CH11:*** *I di- he did it to me. He took my shoe off put they’re in, (a hot tub,) hot everywhere*
> ***R:*** *Why did he do that?*

CH11: *Because I was laughing at somebody else and then he thrown my shoe, [but she-]*
R: *[oh my] goodness*
CH11: *but, kindly, Alison year four, he, kindly got my shoe*
R: *Where did it end up?*
CH11: *It end up on the Trim trail*
R: *How did you feel?*
CH11: Sad

R: *So what kind of person you don't want to have as a friend?*
CH3: *Ehm, Ryan and Tayler*
R: *Okay. Because they are naughty, right? [Revealed earlier in the interview]*
CH3: Yes
R: *So what do they do when they are naughty?*
CH3: *Ehm, they fight*
R: *Oh, they fight, ok.*
CH3: *And (.) I tell them I don't want to play.*
R: *Mhmm (.) And what happened then*
CH3: *They are, they copy me, I talk*
R: *They copy you as you talk?*
CH3: Yes
R: *Mhmm*

Other children with DLD shared stories of peers saying rude words and bullying.

R: *... what kind of person you don't want as a friend?*
CH2: *(Hx-H, Hx-H, Hx, Hx, Hx-H) A person who is a bully(::)*
[...]
R: *Who is a bully, oh, how do you know a bully?*
CH2: *(Hx, Hx, Hx-H, Hx-H) cause he isn't kind to you=*
R: *=Mhm=*
CH2: *=and he says nasty word(::)*
R: *Can you tell me a story? Have you seen a bully?*
CH2: *(Hx, Hx, Hx-H) (O-skar) he push me over (.) and in a school, they push me over.*
R: *Oh and who was this, who pushed you over?*
CH2: *A bully=*
R: *=a bully, okay. Can you tell me more? Is there anything else about a bully?*
CH2: *(Hx, Hx, Hx,Hx) eer, when you bully, er <xxxx> he bully me, he was made <xxxx> when he bully he do it more than once.*

Some of the bad friend behaviours are linked with not listening to teacher or not behaving in school.

R: *And what kind of friends you would NOT want as a friend? What [kind of person?]*
CH10: *[Ehm] (.) (.) ((H)) er, ((Hx), er, if ehm, they, em, be, if, ehm, be horrible they might get told off*
R: *Mhm*
CH10: *by the teacher. If they be caught swearing.*
R: *Oh [I see]*
CH10: *[‘Cause] we’re not allowed to swear in this school.*
R: *Okay, okay. Why is it important that you don’t swear?*
CH10: *Because, ehm, if we ehm swear, we have to do a <xxxx> form*
R: *What is that? Fre- form?*
CH10: *When you have to stay and do de-flection form.*
R: *Oh the [deflection form] ((reflection?))*

CH9 makes an interesting distinction between a good and bad friend at physical level.

CH9: *IF YOU want to be a bad boy, get a bad boy haircut*
R: *((@)) Is that so?*
CH9: Yeah
R: *Do you have a bad boy haircut? How does a bad boy haircut look like?*
CH9: *Is like you have like a colour, like=*
R: *=mh=*
CH9: *=blond=*
R: *=mhm=*
CH9: *=and then have like goes up and is so strange.*
R: *Ahaa, I see and it’s a bad boy haircut, okay.*
CH9: *I saw that in a picture, in google.*

The CH9’s response suggest that it is possible to decide whether you want to be a good or a bad friend and your looks communicate your intentions. CH12 reveals their awareness of reciprocity and interpersonal orientation in their answer.

R: *And what kind of person you would NOT want as a friend?*
CH12: *I wouldn’t have like someone who, if I was new, and I saw loads of people being mean to each other, and being mean to different people, and being mean to the teacher*
R: *yeah*
CH12: *I wouldn’t be best friends if I, if they show me their respect first*
R: *okay*
CH12: *and they, they said “I don’t wanna be her best friend. I’m gonna show her my baddest respect” than she won’t be my friend and then*
R: *mhm*
CH12: *I’ll make myself friend, make loads of new friends.*

Children’s demonstrated mixed levels of interpersonal understanding in the context of friendship. We evaluated their answers against the Selman’s developmental levels.

6.3.4 Developmental levels of *Friendship formation* concepts

According to Selman's (1979) *Friendship formation* framework, the participating 6-8-year-old children were expected to fall within the 0-2 range of developmental stages. We report all stages for each child in Table 6.6. The numbers under the *Friendship formation* concepts headings represent coded evidence that a child is forming a concept at that particular developmental stage. Depending on the amount of evidence provided by each child, there are varying stage numbers under each concept (e.g. CH1 gave 2 responses coded as stage "0" for Motives, while CH2 gave 2 responses at stage 2). Blank values represent no answer. We also provide columns for the highest achieved stage and stage range.

Table 6.6 Friendship formation stages

						Friendship formation concepts			
Child ID	**Gender**	**Age in years**	**# of data sources[1]**	**Highest achieved stage**	**Range of stages**	**Motives**	**Mechanisms**	**Ideal/good friend**	**Bad friend**
CH1	M	8.42	2	0	0	0,0	0,0	-	-
CH2	M	7.86	2	2	0-2	2,2	2,1,1,1	1,1,1,1,0	1,0
CH3	M	7.23	2	1	0-1	0,0	0	0	1,0
CH4	M	8.9	3	2	0-2	2,2,1,0,0	2,0,0,0,0	1,0	1,1,0,0
CH5	F	7.97	2	2	0-2	-	2,2	1	1,0
CH6	M	7.77	2	1	0-1	1	1,1	1	0,0,0
CH7	F	6.99	1	0	0	-	0	0,0	0,0,0
CH8	M	7.47	2	1	0-1	1,1,1,0,0	-	1,1,1	0
CH9	M	7.15	4	2	0-2	1,1,0	2,2,1,0,0,0	2,0,0	0
CH10	F	8	2	2	0-2	2,2	1,1	1,1,0	1
CH11	F	8.78	2	1	0-1	0	1	1,0,0	0,0
CH12	F	7.94	3	3	1-3	2,2	2,2	3,3,3,1	2
CH13	F	8.75	2	1	0-1	1,0	1	-	-
CH14	F	7.17	3	2	0-2	2,2	1,1,1,0,0	1,1,1	1,1

[1]*Data sources include researcher's notes, and interviews focused on Wellbeing, Friendship, Retrospective video recording, and Validation. More data sources indicate higher engagement of the child with the topic and not the need to validate or confirm their answers on multiple occasions.*

Overall, responses show individual differences among children and across *Friendship formation* concepts.

Only CH1 and CH7 give Stage 0 answers across all their responses. They both do not give evidence to some concepts. CH1 could not describe a friend and CH7 could not reveal their motives behind making friends. Their stage 0 answers correspond with the age group of 3-7 years and children's alignment with stage 0 across answers indicates that they seem to dwell too long on the 'momentarily physical activity' as a friendship concept.

CH1 was 8.5 years-old, and in their case, the almost nonverbal communication can be speculatively considered as the reason for perceiving friendships as a means to play. Being unable to connect with peers verbally, CH1 might struggle with getting peers to perform specific activities that CH1 want to get done (stage 1 Friendship as a one-way assistance) or equally, they may not be able to communicate their concepts. CH7 was almost 7-years-old and it can be argued that their autistic profile can contribute towards their stage 0 concepts of friendships.

As the next stage is estimated to develop between 4-9 years of age, some CH1 and CH7 responses would be expected to move towards recognising the psychological awareness of motives, feelings and thoughts in the context of friendship. All other children responded at least once within Stage 1.

Ideal/good friend and Bad friend concepts reveal the biggest differences among children. Two participants did not give any description while two others revealed higher stages of social understanding than the rest of the children.

Only CH12 reveals the highest level of *Friendship formation* concepts among participants. CH12 reaches stage 3 for Ideal/good friend and, interestingly, shows a sophisticated response to Bad friend: *"..being mean to each other, and being mean to different people, and being mean to the teacher [...] I wouldn't be best friends if I, if they show me their respect first."* CH12 has two very close friends with whom they form a small peer group. Being exposed to a higher dynamics of friendship relations within a small group could be one of the catalysts for developing higher levels of social understanding.

In Table 6.7, we compared children's school settings to identify potential differences in children's understanding of making friends.

Table 6.7 Summary of highest reached developmental stages per school settings

Purpose of friendship	Enhanced Provision (n = 3)	Specific Speech & Language Disorder Class (n = 5)	Mainstream (n = 6)	Total
Don't know	0	2	0	2
Stage 0	2	0	1	3
Stage 1	0	3	1	4
Stage 2	1	0	4	5

The comparison shows that children in mainstream classrooms gave most Stage 2 and Stage 1 answers. Only one children with DLD from mainstream classroom, CH11, holds that friends are important to have someone to play with (Stage 0). All 'don't know' responses came from children from the Specific Speech and Language Disorder (SLCD) Class. Two children from the SLC responded in line with Stage 1 purpose of friendship. Two children with DLD in the Enhanced Provision gave Stage 0 answers and one children with DLD in the same settings hold the Stage 2 understanding of the purpose of friendship.

6.3.5 Strategies for and experiences of making friends

Our final RQ asked what strategies for making friends children with DLD follow and propose? Children with DLD reveal a number of ways to make friends. To play with someone is a strategy followed by six children with DLD - CH1, CH3, CH4, CH8, CH9, CH11

> ***R:*** *So, how do I make friends? What if I come to school, to a new school, how do I make friends?*
> ***CH3:*** *Ehm, play with some(each other).*
> ***R:*** *Play with whom?*
> ***CH3:*** *Someone*
> ***R:*** *Play with someone, [ok]*
> ***CH3:*** *[Yeah.]*

CH6, CH7, CH12, CH13 approach peers, introduce themselves, or ask if they can be friends.

> ***R:*** *How do you make new friends?*
> ***CH6:*** *You just aks them.*
> ***R:*** *Okay. What do you [ask them?]*
> ***CH6:*** *[Then you] get, then you get, then you get a FRIEND.*
> ***R:*** *Mhm, And what do you ask them?*
> ***CH6:*** *Can you be my friend? But sometimes they say noo-oo.*
> ***R:*** *((@)) What do you do then?*
> ***CH6:*** *Sometimes they be mean to you.*
> ***R:*** *Mhm*
> ***CH6:*** *And hurt you feelings. (CH6_Wellbeing)*
>
> ***R:*** *Mmm. And can you tell me a story when you made a new friend?*
> ***CH7:*** *Well, when I was, when I want to go up, at the first time I went to Glan=*
> ***R:*** *=okay=*
> ***CH7:*** *=and I didn't know anyone, so I saw a friend's name is [CH5]. And her name was "Hi" and I was saying "Hi, my name is [CH7's name]. What's your name?" And then [CH5] says "Hi, my name is [CH5]."*

When asked whether it is easy or hard to make friends, children with DLD stated a variety of experiences. Six children with DLD - CH4, CH7, CH9, CH10, CH13, CH14 - find it easy.

> ***R:*** *Is it easy or hard to make friends?*
> *CH9: Easy*
> ***R:*** *Easy? How do you do it?*
> ***CH9:*** *So you play together and like say nicely.*

Five children with DLD - CH2, CH5, CH8, CH11, CH12 - find making friends hard because they do not know the child or the environment.

> ***CH12:*** *It's really hard to make friends when you're new to a school*
> ***R:*** *[mhm]*
> ***CH12:*** *[be]cause you don't know what to say, you don't know what to do, and you're new and you're new to [everything].*

Three remaining children with DLD (CH1, CH3, CH6) did not respond clearly whether they find it easy or hard to make friends.

CH2, CH3, CH4, CH6, CH9, CH10, CH11, CH12, and CH14 offered their advice for making friends. Some children with DLD revealed strategies specific to children who may find it difficult to make friends because they experience difficulties with language and communication.

> ***R:*** *[...]How they [children] can make friends?*
> ***CH14:*** *Ehm, doing ((going)) to next to body and dust ((just)) play with somebody, then, then ask tan ((can)) you want, tan ((can)) you be their friend, and (they got listen), if they say 'No' tell a teacher*
> ***R:*** *Mhmm, okay. And what would you say to somebody if they may have difficulties talking maybe if they don't know how to talk*
> ***CH14:*** *Ehm let another person do it [who is]*
> ***R:*** *[mhmm]*
> ***CH14:*** *been your friend [let a]*
> ***R:*** *[Mhm]*
> ***CH14:*** *teacher do it for you.*
>
> ***CH4:*** *So you listen to teacher what she's speaking or other children=*
> ***R:*** *=mhmm=*
> ***CH4:*** *=after you kind of learn a language and after you go, will be understand how you say that.*
>
> ***R:*** *So how would you ask them if you can't really speak or if, if, what would you advise those children that have difficulties [to talk]*

CH12: *[er I] would say, er, to say, if I was n- if someone was nervous=*
R: *=mhm=*
CH12: *=I would just like stand there and, like, er, stay the first word "Can" and then they say "Can (.) be f-" and then you say "friends" and then that's you normally just stop to say to say one word and [then]*
R: *[mhm]*
CH12: *you say the next word and then it carries on then.*
R: *Okay.*
CH12: *You make friends sometimes.*
R: *Okay. That's very good, okay. I like that.*
CH12: *Er, normally, when you don' , you're too shy to make friends, you normally just sit alone and then, people come and say "Can you please (.) do you want, do you need a friend?" and then I say "yes" and then er, then you be BFFs*
R: *Mhm, [mhm]*
CH12: *[if you've] been together for a whole year.*
R: *Mhm, [mhm]*
CH12: *[Every] year.*

Children with DLD follow a variety of strategies to make friends – from physical play, onlooking behaviour to asking or inviting peers to join a game. Their advice to children with difficulties speaking and understanding language includes asking another friend or a teacher to help with the communication, pick up the language from peers and teacher, try speaking up one word at a time, or hang around peers and wait until they approach you.

6.4 Discussion

6.4.1 Concepts of Friendship formation

The present study has generated new insights into both the developmental maturity and the understanding of friendships in children with DLD. Like most children, our participants assign meaning to their friendships through play and joined activities with peers but seem to overly dwell on the physical interactions when describing good and bad friends. Differences across individuals are noteworthy, and so are the within child disparities. Many children could reach up to two stages difference between understanding the motives for having friends, strategies to make friends and good/bad friend description while the conceptions of a couple of participants stayed at the lowest developmental stage throughout. Unexpectedly, none of the participants reported language difficulties as a barrier when trying to make friends. Making such an informative and context-specific finding is a result of actively involving children with DLD in a study about their lives.

6.4.2 The prevalence of play and physical activities

One particularly interesting finding was that the children with DLD revealed that their conceptions of *Friendship formation* are rooted in play and physical interactions. They want to make friends to play with someone and indeed, they reported making friends through joining in with play. The importance of contexts of play and physical activity came up even for children describing good friends with a mutual sense of 'we' and 'us' that developed over a period of time. Although these answers correspond to stages 2 and 3, the highest ones reached in the study, the same children kept reverting to lower stages when talking about their motives behind and strategies for making friends. Play and physical proximity thus remain important even for children with advanced understanding of some *Friendship formation* concepts.

Children with DLD highlight the role of play in their understanding of *Friendship formation*. The same has been confirmed in essays (Bigelow & LaGaipa, 1975), interviews and experiments with typically developing children (Afshordi, 2019; Furman & Bierman, 1983; Liberman & Shaw, 2019). Play facilitates deeper connection with others through verbal and nonverbal communication, conflict management or even shared pretending (e.g. Dunn, 2004, Gottman, 1983). Our study complements these findings, indicating to children with DLD play may represent a safe environment to make friends and to test out if peers are good or bad friends. Children with DLD see play beyond an apparent context for interacting with peers as captured by Selman (1980).

6.4.3 Recognising what makes a good friend

In this study, children's concepts of good and bad friends reflect the developmental shift from the 'momentary physical play' concepts of friendship to appreciating the psychosocial characteristics of friends and relationships themselves (Selman, 1980). Although participating children still consider physical activities and proximity (sitting together in class, joining gardening club, school activities) as a distinction, an ideal friend is also someone displaying kind, caring, and helpful behaviours towards children with DLD (stage 1).

Most participating children with DLD described an ideal friend and a bad friend along the lines of playing with them and providing (or refusing) them one-way assistance. This self-focused and subjective perspective does not yet involve reflecting upon the thoughts and intensions of prospective friends (Selman, 1980). Exploring this area may therefore be important in relation to children's vulnerability towards not recognising friends with negative

influences. At these stages, children may not simply be aware of the psychological reciprocity in interactions and could be easily influenced by peers who are physically present, who play with them, and do them favours. Our findings could shed light on the potential social understanding reasons for girls with a history of DLD being more likely to fall victims to sexual assaults than TD girls (Brownlie, Jabbar, Beitchman, Vida & Atkinson, 2007).

Our participants were at the age when their friendship concepts are being formed. However, it is concerning to learn that their good and bad friend descriptions are at the lowest stages of their social understanding as outlined by Selman (1980). While acknowledging companionship and positive behaviours towards a child as friend-like behaviours, children with DLD did not recognise similar interests or likes with friends that would distinguish them from non-friends. Studies with typically developing children suggest appreciating shared characteristics of friends, e.g. gender, interests, activities, is present as early as 3-4 years of age (Afshordi, 2019; Liberman & Shaw, 2019). The finding that 8 year olds with DLD struggle with this aspect of understanding friendships aligns with findings from a study with primary school aged (9-11 years) autistic children (Calder et al., 2013). It is also consistent with the evidence from a quantitative research suggesting that perceiving friendships may be a particular area of vulnerability for children with DLD (Forrest et al., 2021). The present study elucidates these findings by highlighting that immature views of friendships are a contributing factor.

Furthermore, our findings may also be relevant for older children with DLD and could indicate one of the potential reasons behind increased number of juvenile offenders with language difficulties (e.g. Blanton & Dagenais, 2007; Bryan et al., 2015). Children with DLD may fall victims to false friends, who may misuse their trust, and since offenders with DLD possess a higher risk of reoffending (Winstanley et al., 2020), there is a possibility that rehabilitation services may not be addressing the correct issue.

An important implication is that conceptions of friendship and thoughts, feelings and motivations in good and bad friends should be an area routinely assessed and (if appropriate) targeted in educational and therapeutic interventions for children with DLD.

6.4.4 The misalignment of social understanding across the Selman's friendship domain

Overall, children with DLD participating in this study responded broadly within age-related expectations for the development of friendship according to Selman's stages. Since stages 0,

1, and 2 overlap and together, describe children between the age of 3-12 years, it is not surprising that these levels were mostly represented in the data from 8-year-old children. Responses that varied across all three stages within a single child were noted in half of the participants, rather than these children having a consistent level of friendship understanding. Selman and Demorest (1984) observed the same pattern in two children with socioemotional and interpersonal difficulties. For all children, the fluctuation across stages is part of natural development influenced by internal and external factors such as context (Selman et al., 1977). Children's development of social understanding entails shifting upwards but also transforming orientation towards self and others (Selman & Demorest, 1984). These changes in understanding are qualitative, involving qualitative restructuring of issue understanding, not a quantitative or linear increase of knowledge (Selman et al., 1977). Naturally, this complexity manifests in a multidimensional development.

Surprisingly though, there were different trends across the participants' development. Given that advancing in social understanding is a complex process, it is unusual to identify CH1 and CH7, who kept their responses at the same level of the lowest understanding of friendship concepts. Severe expressive language difficulties in CH1 and suspected autistic profile in CH7 could explain the consistency and low social understanding across responses of both children.

For most children from mainstream classroom settings, the presence of more children and variety of relationships may constitute reasons for reaching higher levels of social understanding. The exposure to experiences with different peers could encourage the development of social understanding. In comparison, only one child in the Enhanced Provision and no participants from the Specific Speech and Language Disorder Class responded in line with this stage. It needs to be noted however that in the current UK schooling system, education placement reflects children's language skills and children with DLD in the mainstream classrooms should have better language than those in the Enhanced Provision or Special Class. Therefore, we cannot infer causation but rather association between the placement and social understanding.

This finding contributes to the debate on inclusive classroom settings. Inclusion as a human right has been promoted via mainstream education; however, its effectiveness in practice has been doubted due to inconclusive findings about its benefits towards children's social and educational outcomes (Lindsay, 2007). Our study implies that children with DLD in mainstream settings show higher development of *Friendship formation* concepts than their

peers in language units or special language and communication classes. Children with DLD in mainstream settings outperformed those in special education in math and science (Knox, 2002). If the aim of education was to encourage holistic development of an independent individual, mainstream settings seem to be the right option to achieve this goal.

6.4.5 Making friends strategies and advice

Our final research question concerned children's perceptions of how to make friends and what could make that easier or more difficult. Children with DLD in our study do not perceive their language difficulties as a barrier to making friends. Many reported finding it easy to make friends, and those who admitted that making friends can be hard explained that their lack of knowledge of a peer or familiarity with the environment could be an obstacle. None of the participating children mentioned language or communication difficulties as a potential complication. Only when prompted to give advice to children who could experience problems with language, a number of children recommended asking teacher for help, trying to pick up the language from the teacher, or giving it a try and hoping that other children will come and invite you to play in case you are shy. The context of play remains very relevant and does not always place high linguistic demands. Children with DLD in the present study said they would play with peers or ask them directly if they could join in with their game or even become friends.

This finding may be specific to our study design as it does not align with observational studies and teacher reports, in which children with DLD struggle to approach their peers (Brinton et al., 1997; Fujiki et al., 1999b). Nonetheless, other qualitative studies with children and young people with DLD mirror our results. In the perceived quality of life study with participants aged 6-18 years, language difficulties did not come up as a specific barrier to peer interactions but rather to classroom and academic engagement (Markham et al., 2009). In a qualitative evaluation of a speech and language programme, school-aged children with DLD identified language and communication as areas, in which they could improve (Roulstone et al., 2012). However, they did not perceive them as crucial for their peer relationships (Roulstone et al., 2012). Their older peers did not see their language as problematic and instead gave importance to managing own behaviours or academic performance (Roulstone et al., 2012). Not perceiving own difficulties in language and communication, or considering them as problematic when interacting with others could be linked with receiving SLCN support,

believing in having reached sufficient communication levels, or simply not perceiving language as central to social functioning.

Another explanation could be that children with DLD appreciate that the attitudes and behaviours of others also influence their mutual interactions. At the age of 7-10 years, they report that language impacts their interactions with non-friends but not with friends and relatives (Merrick & Roulstone, 2011). This suggest that children with DLD could perceive friends as those with whom they may be able to connect verbally and thus do not consider language as a barrier to friendships. Such perception would be tacit to children with DLD though as it did not come up in their answers to direct questions about good and bad friends. Could this inferred perception of language not being a barrier to making friends link with the lower understanding of good/bad friends found in our study? Maybe learning that children with DLD would like other people, including peers, teachers and parents, to listen and avoid interrupting or even shouting at them when they interact (Roulstone & Lindsay, 2012; Roulstone et al., 2012), could reflect some of the behaviours that they encounter as they grow up and could be off-putting in their making friends efforts.

6.4.6 Strengths and limitations

The research approaches adopted in the current study pose strengths as well as limitations. An important strength lies in adapting the Selman's interview schedule to multimodal methods. We combined children's own experiences and artwork to facilitate reflection and self-expression. As opposed to tools such as theory of mind stories and vignettes that are language heavy, require abstract thinking and can be detached from children's experiences, we engaged with direct experiences of children and asked Selman's *Friendship formation* interview questions. This way, we were able to systematically evaluate children's responses against their developed conceptions of friendship.

On the other hand, our child-centred approach might have limited our findings to some extent as we may not always have elicited full answers from participating children, especially those with emotional and behavioural difficulties. We respected children's boundaries and whenever possible, reverted to unanswered or ambiguous responses in follow up meetings. Consulting parents or teachers on specific topics might have been a route to obtaining more thorough data; still, we prioritised our objective to learn directly from children about their own *Friendship formation* concepts.

We acknowledge that the use of art modalities and their representations may not have resulted in producing relevant data for all children. We validated the art representations of concepts with every participant to see whether they described or connected their work with any of their friendship conceptions. In some cases, art served as a means to make children more comfortable and have a playful experience when participating in an interview.

Our coding could have been strengthened if we would establish an inter-rater reliability. Initially, we did not consider involving another researcher in the project due to the case study design of the wider study. Limited time resources of the doctoral project and the pandemic situation prevented us from including another researcher. The very focused interview schedule generated data, which does not require deeper interpretation. Selman's (1979) scoring manual is detailed and easy to follow. It extensively describes the assignment of developmental stages to answers and includes specific examples. Therefore, we believe that the quality of the findings is not affected.

6.5 Conclusion

To our knowledge, this study is the first one investigating friendship concepts by directly engaging with children with DLD in multi-modal interviews. Previous research into the friendships of children with DLD collected data from observations or parent and teacher proxies. By targeting and pioneering a direct investigation of *Friendship formation* concepts with children with DLD, this exploratory study contributes to the wider knowledge of peer relationships of children with DLD by proposing hypotheses to be tested in further studies.

We learned that at the age of 6-8 years, children with DLD lack awareness of motives, thoughts, and feelings of peers, especially when distinguishing between good and bad friends. As this lack of perspective-taking could be misused by more mature peers, we may need to compare the concepts of TD children to see whether there are discrepancies between groups or whether this is part of natural development.

This study further contributes to the debate on the effectiveness of inclusion. From the developmental psychology perspective, it implies that children with DLD in mainstream classrooms might reach higher levels of social understanding within the context of friendship formation when compared to their peers in Enhanced Provision or Specific Speech and Language Disorder Classes. This observation does not imply causation because language skills are key in determining children's placement. Those in mainstream classrooms have

better language skills than children in the Enhanced Provision or Special Classes, and so their friendship conceptions could be equally linked with their linguistic abilities.

We know that children with DLD have difficulties in peer relationships, yet our participants do not perceive language as a barrier when making friends. Therefore, researching self-perception and how it is shaped by peer relationships could reveal its importance for the developmental outcomes of children with DLD. Future research would benefit from engaging not only children with DLD but also their peers in learning how their relationships function and could be improved.

Chapter 7 Children with DLD as friends

Chapter 7 investigates the perspectives of classroom peers of children with DLD. Friendship interviews with the friends of children with DLD are analysed using framework analysis. Identified themes are presented and discussed in relation to education and speech and language therapy practices.

Chapter 7 is structured as an academic paper, which was submitted to the Research Papers In Education journal under the submission ID 219200352. The paper is currently under review.

Abstract

Developmental Language Disorder (DLD) is a common childhood condition affecting language development, which can in turn impact children's peer relationships. Although most children with DLD are included in mainstream classrooms, there is limited knowledge about the way friendships support or hinder the learning experiences of children with DLD in inclusive settings. Typically developing (TD) peers' views tend to get overlooked when considering inclusion but they need to be heard as they too adapt to inclusive classrooms. In this study, we explored the perspectives of peers on their friendship quality with children with DLD. We conducted friendship interviews with classroom friends (n = 9) of 6-8-year-old children with DLD (n = 9), who attended Enhanced Provision and Mainstream classrooms in the United Kingdom and the Republic of Ireland. We used sociometric nomination methods to identify the reciprocal friends of children with DLD. We then interviewed these friends using art-based methods and analysed our interview data using thematic framework. Friends of children with DLD attending Enhanced Provision showed an inclusive mindset and revealed their own strategies for overcoming potential communication barriers. In contrast, friends in full-time Mainstream classrooms did not report experiencing communication difficulties when interacting with a peer with DLD. We conclude that educational practice should build on those inclusion strategies that children find natural and consider a role of teaching all children about adjustments that can support inclusion of those with communication difficulties.

Keywords: peer relationships; inclusive education; qualitative methods; participatory research; developmental language disorder

Children with Developmental Language Disorder as friends: The perspectives of their classroom peers

Janik Blaskova, L., & Gibson, J. L. (under review). Children with Developmental Language Disorder as friends: The perspectives of their classroom peers. *Research Papers In Education*.

7.1 Introduction

In an average class of 30, approximately two children experience language difficulties at a clinical level (Frazier Norbury et al. 2016; Tomblin et al. 1997). Developmental Language Disorder (DLD) denotes limited abilities to use and/or understand language without a known cause such as hearing impairment or intellectual disability (Frazier Norbury et al. 2016; Tomblin et al. 1997). DLD presents academic challenges to affected children, who often face co-occuring literacy and learning difficulties (e.g. Bishop & Snowling, 2004; Dockrell & Lindsay, 2004). In addition to learning difficulties, DLD places children at risk of social, behavioural and emotional problems (Yew & O'Kearney 2013) that often manifest in poor peer relationships (e.g. Forrest et al., 2021; Laws et al. 2012). In the United Kingdom (UK) and the Republic of Ireland (RoI), children with DLD have been traditionally supported through Enhanced Provision and Specific, speech and communication classrooms with tailored education programmes. However, an ongoing emphasis on inclusion brings challenges as inclusive settings must support children's learning as well as their social functioning.

Moving towards inclusive education stems from the United Nations' (2006) efforts to seek "inclusive, quality, and free" education for people with disabilities, so that they have equal learning opportunities to others within their communities. Countries, including the UK and the RoI, have translated this human right into mainstream schooling policies but the effectiveness of inclusive education in practice needs to be assessed more systematically (Kenny et al., 2020; Lindsay, 2007). Implementing inclusive schooling is a complex process, which we can understand better if we consider the perspectives of the main actors – children. Peer interactions and friendships are key to children's social functioning, yet peer relationships studies of children with DLD scarcely involve children as active informants (Janik Blaskova & Gibson, 2021). In light of inclusive education, this investigation promotes the voice of typically developing peers, who are essential to the social adjustment of children

with DLD, and who also need to adapt to inclusive settings. We will investigate the views of peers about children with Developmental Language Disorder (DLD), who attend classrooms with different inclusive arrangements.

Research shows that children with DLD are poorly accepted by peers and tend to have fewer reciprocal friends than typically developing (TD) children (e.g. Andres-Roqueta et al. 2016; Gertner et al., 1994; Fujiki et al., 1999; Laws et al. 2012). Children with DLD initiate and respond to peers less frequently than their TD peers, and instead, they show more withdrawn and non-social play behaviours (Fujiki et al. 2001; Guralnick et al., 1996a; Hadley & Rice 1991). In self-reports and interviews, children with DLD confirm being aware of their peer difficulties (e.g. Jerome et al. 2002; Lindsay et al., 2008; Marton et al., 2005). Experiencing higher levels of victimisation and lower peer support in comparison to their TD peers (e.g. McCormack et al. 2011; Redmond, 2011), children with DLD consider friendships as crucial to their perceived quality of life (Lyons & Roulstone, 2018; Nicola & Watter, 2018). This evidence highlights that children with DLD find their social wellbeing important and keep facing peer relationship difficulties in school. To create a more supportive learning environment for children with DLD, we need more in-depth knowledge about their peer relationship dynamics, and that includes understanding peer perspectives.

What we do know about the way peers perceive children with DLD comes from observation studies that complement previously outlined findings from peer and friendship nominations. Peers tend to preferentially choose to interact with TD children and not with children with DLD, or those at cognitive disadvantage (Guralnick et al., 1996b; Rice, 1991). Children with DLD and speech impairments can be ignored twice as often as their TD peers (Hadley and Rice 1991). However, interventions have shown a potential to change the low frequency of interactions. Training teachers in redirecting help seeking requests from children with DLD to peers, increased peers' positive or neutral responses to children with DLD (Schuele et al., 1995). In newly formed playgroups of children with mixed language abilities, all children had similar friendship experiences and peer selected children with DLD as friends at similar levels to other TD children (Guralnick et al., 1996b). This suggests that peers may not necessarily see limited language abilities as a barrier to making friends with children with DLD and that other factors could hinder the social integration of children with DLD (Guralnick et al., 1996b).

Dyadic and triadic observations show the potential of peer support to scaffold children with DLD in peer interactions (Brinton et al., 2000) and could potentially mediate interventions

aimed at improving the communication of children with DLD (DeKroon et al., 2002; Murphy et al., 2014; Robertson & Weismer, 1997). In further efforts to design peer-facilitated interventions, potential impact on peers needs to be considered. Observations reveal that TD children make more low-quality requests and talk more about negative feelings when interacting with children with DLD compared to interacting with TD peers (Murphy et al., 2014). Still, before creating any peer-mediated interventions, we need a more thorough picture of the peer relationships of children with DLD. Knowing how peers perceive children with DLD as friends presents a crucial piece of information for planning any therapeutic or educational interventions, and creating truly inclusive settings.

Peers nominations, reciprocal friendship data and observations give some indications of how peers consider children with DLD as friends, but we lack the specific aspects that peers appreciate or do not like in children with DLD. Our current study aims to address this gap in the literature, and by talking to peers, we aspire to find answers to the following research questions:

1. How do TD peers perceive children with DLD as friends?
2. Is the friendship quality between children with DLD and TD peers influenced by the language and communication difficulties of children with DLD?
3. What do peers of children with DLD suggest as strategies to help the latter group make more friends?

By answering the above questions, we aim to contribute to the existing body of research on peer relationships of children with DLD and to the practice of inclusive education.

7.2 Method

The current study is part of a broader project investigating the peer relationships of children with DLD in a series of case studies. It received ethical approval from the University of Cambridge and the Health Research Authority, who supported the recruitment. We identified participating children by contacting primary schools, DLD supporting charities and organisations via social media, emails and in person during conferences.

We adopted a qualitative approach to understand the subjective experiences and perceptions of children with DLD and their peers. This paper analyses sociometric nominations and interviews conducted with classroom friends (n = 9) of children with DLD (n = 9). We

consider friends as active informants about children with DLD, who are the focus of our study.

7.2.1 Participants

Participating children with DLD attend Enhanced Provision and Mainstream Primary schools in the United Kingdom and the Republic of Ireland. In Enhanced Provision, children with DLD join a specific language and communication class in the morning. The morning class has maximum of eight children, who receive a variety of group and one-to-one interventions to improve their speech, language and communication. In afternoons, children with DLD from the Enhanced Provision join their mainstream classroom and curriculum.

Children with DLD in the Mainstream settings attend the mainstream classroom full-time and receive speech, language and communication interventions on a pull-out basis.

7.2.2 Data collection

Data collection took place from March to November 2019. We visited schools on average of eight different occasions to collect data about each child with DLD. We started with classroom and playground observations. Next, we collected sociometric data and paired children with DLD with a classroom friend, who joined them in a video recorded dyadic play.

Additionally, we interviewed friends two times. First, we conducted a friendship quality interview. In our second meeting, we did a retrospective interview about the video recording and validated our preliminary findings.

7.2.3 Standardised language and NVIQ assessments

Psycholinguistic data about children with DLD was collected in a number of 10-15 minute meetings. We used Ravens progressive matrices to collect performance IQ data and calculated the percentile of the raw score (Raven et al., 2004). Our language battery included sentence comprehension and naming tasks from the Assessment of Comprehension and Expression 6-11 (Adams et al., 2001) and sentence recall from the Clinical Evaluation of Language Fundamentals Assessment of Comprehension (Semel et al., 2006). The psycholinguistic details served as a background information about children with DLD.

7.2.4 Sociometric assessment

We used peer nomination and reciprocal friendship measures to establish how mainstream classroom peers perceive children with DLD. In peer nomination, children gave three names

of peers they like to play with most and three of the least preferred peers (Coie et al., 1982). We followed the Coie and Dodge (1983) method to identify the social status categories of rejected, popular, neglected, controversial and average (Coie et al., 1982).

In addition to peer nominations, we identified reciprocal friends by asking children to list their three best friends and cross-referencing their responses (Sanderson & Siegal, 1995). When a child with DLD did not receive a reciprocal nomination, we expanded the criteria to their nominations of best friends regardless of reciprocity and consulted teachers to identify a peer who interacts with the child with DLD most of the time.

7.2.5 Interviewing children

We invited identified friends to interviews that commenced with art-based activities. First, we demonstrated the circle of friends activity illustrated in Figure 7.1.

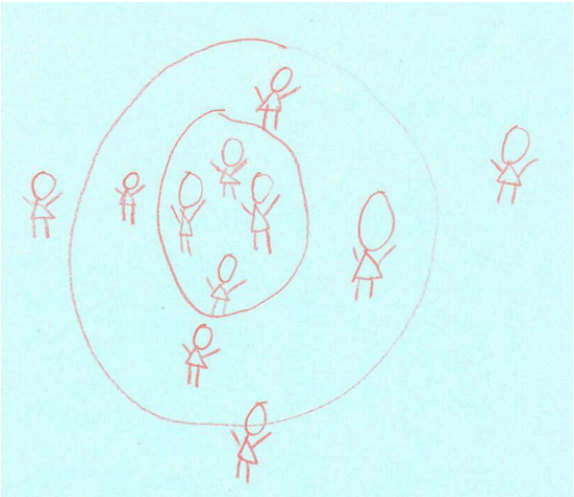


Figure 7.1 Circle of Friends by CH10 friend

We started drawing ourselves in the middle of the three concentric circles. We continued with describing our school friends while drawing them closer or further from us, depending how we liked or did not like playing with them. Afterwards, we invited children to draw and describe their own circle of friends from the classroom. This activity aimed to confirm that they actually were friends with the child with DLD. If the interviewed friend did not mention the child with DLD, we specifically asked about them.

Next, we invited children to portray the child with DLD using coloured papers, crayons, stickers and other art and craft items. As they were doing the activity, we asked about the child with DLD following the friendship quality interview guide of Dunn et al. (2002) and supplementary probes listed in Table 7.1.

Table 7.1 Friendship quality interview

Question	Supplementary probes
1. What kinds of things does [child with DLD] like playing?	And what else?
2. What makes [child with DLD] happy?	Is there anything else that makes [child with DLD] happy?
3. What makes [child with DLD] sad or upset?	Can you think of anything else that makes [child with DLD] sad or upset?
4. What do you really like about [child with DLD]?	Can you tell me more about how [child with DLD] is/does [characteristic, behaviour]?
5. Sometimes friends annoy each other; is there anything you don't like about [child with DLD]?	Is there anything else that you don't like about [child with DLD]?
6. Do you do things together much at school?	How often do you do things together at school?
7. What do you usually play together?	How often do you play that?
8. Who decides what you play?	How often does [participant/friend] decide what you play?
9. Do you have fun together?	When do you usually have fun?
10. Do you and [child with DLD] tell each other secret things and feelings?	How often do you tell each other secrets? How much
11. Most friends fall out or have arguments sometimes; have you ever fallen out/ quarrelled with [child with DLD]?	What happened? How did it finish? How did you feel about it? Do you often fall out like that?
12. Do you usually play just with [child with DLD], or are there other children who play with you both?	Who are they? Can you tell me their names? How often do they play with you and [child with DLD]?

Additionally, we asked friends about their communication with children with DLD. We formulated this interview question in a rather informal manner, relating to the researcher's own experiences. Here are some examples:

- You know, sometimes I find it difficult talking to [child with DLD]. Sometimes I don't really understand what they say…Has it ever happened to you?
- Have you had any difficulties, maybe, understanding [child with DLD]?
- And you know, sometimes I find it difficult to understand [child with DLD]. Do you have any difficulties when they speak?

We were concerned initially about friends conforming with our experiences; however, this was not the case. Friends responded based on their own experiences and answered straight-away.

7.2.6 Ethical reflections

Interviewing children needs specific ethical considerations to preserve their best interests while ensuring their voices are heard. We followed the guidelines of the British Educational Research Association (BERA, 2018) for obtaining informed assent from children and working towards eliminating their perceptions of adult-child power imbalance. We briefed children about confidentiality and the need to raise any concerns to their health and safety if they come up.

Interviewing peers of children with DLD is unusual, and we paid special attention to eliminate potentially adverse effects to children's relationships. We reiterated our goal to learn about children's friendships and help other children make friends. We strived for sensitivity, and when children revealed any negative peer interactions, we stayed attentive, responded with compassion but avoided judging or giving advice.

7.2.7 Framework analysis

We used MAXQDA, a computer-assisted data analysis tool, to transcribe, organise and code our data. We adopted a framework analysis (FA) because of its detailed and methodical steps, appreciated by qualitative researchers in health and social studies (Parkinson et al. 2016; Ritchie & Spencer, 1994). We started with familiarising ourselves with the data and taking notes of our ideas for themes while reading through our interview notes and transcriptions. Next, we created a preliminary analytical framework, which consisted of concepts from previous peer relationship literature, the friendship quality interview guide, our study objectives and themes that we stemmed from the data. Establishing the analytical framework involved multiple discussions between the authors and with peer researchers at the University

of Cambridge. The final version integrated the feedback from peers and was agreed by both authors. Table 7.2 displays the part of the analytical framework relevant for the current study.

Table 7.2 Analytical framework

Theme	Categories
3. Friends' perceptions of children with DLD	3.01 Friend's communication with cwDLD
	3.02 Friends like about cwDLD
	3.03 Friends do not like about cwDLD
	3.04 Disputes in friendships
	3.05 Making friends advice to children with DLD

In parallel with establishing the analytical framework, we started with the third step - indexing. We summarised chunks of our data by assigning them to descriptive codes and applied the analytical framework to group the codes into categories and themes. Indexing was an iterative process, we kept re-organising and re-naming the categories as we refined our ideas. After we finalised the analytical framework, we revisited our indexed data and discussed any discrepancies.

In the fourth step, charting, we summarised and organised the indexed data into charts. In the chart, each column represented a child with DLD and rows outlined the themes which supported a thematic analysis across cases (Ritchie & Spencer, 1994). Finally, we completed our analysis in the mapping and interpretation stage. We looked for patterns in the descriptions of behaviours and characteristics of children with DLD, the attitudes of their friends and their mutual interactions. We sought connections and explanations among these as presented in the data. This inductive process requires being immersed in the data and can be very intuitive and rather complex to capture (Ritchie & Spencer, 1994).

7.2.8 Credibility and trustworthiness

To establish the credibility and trustworthiness of the current study, we followed a number of guidelines suggested by Lincoln and Guba (1985). We built trust with participants when we conducted classroom and playground observations that were part of the broader project. We collected data on numerous occasions to prolong our engagement with participants. We verified our understandings of children's responses in a validation interview, where participants clarified and elaborated on some of their previously described examples.

Reflective journals helped keep the researcher biases in check and capture ideas for further exploration and initial analysis. Further, we engaged with peer researchers at the University of Cambridge and presented them with our preliminary findings. Their reflections endorsed our supportive evidence, confirming that our results represent our data meaningfully.

7.3 Results

Table 7.3 outlines the background characteristics of children with DLD in this study.

Table 7.3 Description of children with DLD

Child with DLD	Gender	Age years	IQ %tile	ACE 6-11 Sentence Comprehension %ile	ACE 6-11 Naming %ile	Sentence Recall CELF4	School settings	Social status	Reciprocal friends	Nominated as friends
CH1	M	8.42	95	2	5	0	[1]EP	Neglected	0	0
CH2	M	7.86	95	63	99	54	EP	Neglected	1	1
CH3	M	7.23	37	1	16	6	EP	Rejected	0	0
CH4	M	8.9	9	3	5	10	[2]MC	Average	3	4
CH10	F	8	2.3	5	1	12	MC	Average	3	3
CH11	F	8.78	0.1	2	1	11	MC	Rejected	1	1
CH12	F	7.94	37	50	37	33	MC	Popular	2	4
CH13	F	8.75	5	5	5	17	MC	Rejected	1	1
CH14	F	7.17	0.4	9	75	37	MC	Average	1	2

[1]*EP – Enhanced Provision*
[2]*MC – Mainstream Class*

We observed a range of social statuses in the participating children with DLD. There is no preponderance of any status category (3x Average 3x Rejected 2x Neglected), and we have identified only one child with *popular* status and none with *controversial* status. Potential differences can be observed between classroom settings. Children with DLD from the Enhanced Provision are on the low impact and low preference scale. In Mainstream, half of the children with DLD are in the *average* group and one child has *popular* status.

Similar to social status, reciprocal friendships give a variety of results and indicate differences between classroom settings. Two children with DLD in the Enhanced Provision were not nominated as friends at all, and only one identified a reciprocal friend. All children with DLD from the Mainstream settings made a reciprocal friendship nomination, and half of them reached the maximum 3 reciprocal friends number, limited by the measure.

Table 7.4 presents the characteristics of the participating friends that we interviewed.

Table 7.4 Interviewed friends of children with DLD

Friend ID	Friendship	Social status	Year
CH1F	Nominated	Popular	Year 3
CH2F	Teacher appointed	Average	Year 3
CH3F	Nominated	Controversial	Year 2
CH4F	Reciprocated	Rejected	2nd class [YR3 UK equivalent]
CH10F	Reciprocated	Popular	Year 3
CH11F	Reciprocated	Neglected	Year 3
CH12F	Reciprocated	Popular	Year 3
CH13F	Reciprocated	Controversial	Year 3
CH14F	Reciprocated	Popular	Year 2

7.3.1 Interview findings

We present the findings from interviews with friends of children with DLD according to themes outlined in our analytical framework and include illustrative quotations.

7.3.1.1 Friends' communication with children with DLD

We asked friends how they perceive their mutual communication. The friend of CH1, who was the least verbal child with DLD, acknowledged that the communication can be challenging.

> ***CH1F**: But, we find it a little bit hard but then we do understand.*
> ***R**: How do you understand? What is the trick, tell me?*
> ***CH1F**: Ehmmm…, we listen to the words he says, then we try and work out what he's trying to say, then we understand it.*

CH2 had the highest scores in the language assessment from participating children with DLD in the Enhanced Provision but still, their difficulties are noticeable. Their friend does not seem to perceive the difference in their communication and looks for ways to overcome any potential communication barriers they may face.

> ***R**: …How is it talking to [CH2]?*
> ***CH2F**: It's like everyone else.*
>
> ***R**: …So, I mean, how do you play with them [children from the Enhanced Provision], 'cause, even myself, I've found it difficult talking to them, you know sometimes, I don't really understand what they say.*
> ***CH2F**: So, sometimes, I ask them, when [names another child from the Enhanced Provision] is playing with us, I ask him 'what do you wanna play?' Give him some options like Hide*

and seek, It, One, other stuff, I let them pick and then that's the same with [CH1] or [CH2].

A friend of CH3, who is one of the least verbal participating child from the Enhanced Provision, reports trying to stay connected through communication in different ways.

> ***CH3F**: Ermm, some of his words, when he says them, erm, they're, erm, I actually understand, some of the words I'm thinking what the sentence, the whole sentence would be.*
>
> ***CH3F**: Sometimes I just make things up to answer him back.*
> ***R**: Do you?*
> ***CH3F**: ((nodding))*
> ***R**: And why, why would you do it?*
> ***CH3F**: Ehm, 'cause sometimes I don't really understand him so I just answer something else.*
> ***R**: Yeah. Is it just to, just to tell him something? Is it that you want him to keep talking or you don't want to feel bad or you feel like you need to say something?*
> ***CH3F**: Uhm, just feels like I just need to say something back.*

From the above responses of friends of children with DLD attending Enhanced Provision in mornings, the effort and interest of their friends plays a role in their mutual communication.

In mainstream settings, only one friend revealed that CH14 has difficulties understanding words. This friend of CH14 supports CH14 with reading, which makes them aware of the particular difficulties.

> ***CH14F**: I think when me and CH14 read a book together, and then, CH14 was (confused) as one word as something completely different to what it really is and then it just makes me laugh cause of what she thinks it is.*
> ***R**: Okay. Do you remember the word at all?*
> ***CH14F**: Ehm, no, but sometimes she thinks some words, words are completely different words and she doesn't really understand that and it just makes me laugh.*
> ***R**: And do you think she minds if you laugh about it?*
> ***CH14F**: Erm, I don't think she really does mind, 'cause I think she realises 'Oh, that isn't actually the word.'*

In addition to reading, CH14 has noticeable difficulties with speech (fronting). Interestingly, CH14F did not reflect on that at all. Other friends from mainstream settings did not report experiencing or noticing difficulties of children with DLD with communicating.

7.3.1.2 What peers like about their friends with DLD

The qualitative interviews revealed the specifics of a child's characteristics that their friend likes or does not like. Friends like social play and playful behaviours in children with DLD.

> ***R***: *And what do you really like about [CH3]?*
> ***CH3F***: *Hmm… That he plays nicely.*
> ***R***: *So, what, what is it that you like about [CH4] the most?*
> ***CH4F***: *Mm, that he plays with me.*
> ***R***: *….And, what do you really like about [CH11]?*
> ***CH11F***: *Ehm, she is really funny sometimes and she does really funny dances and I like dancing, and… ehm, she, likes music and so do I.*

A friend recognised prosocial and collaborative behaviour in CH1, who is almost nonverbal.

> ***R***: *Mhm. And what do you really like about [CH1]?*
> ***CH1F***: *Ehm… Because when we're doing work with him, he listens and helps us.*

Friends further like inclusive tendencies in children with DLD, who let peers join in or invite others to play, and do not limit their play to their friends only.

Some friends mentioned that they extend their social play with a child with DLD and together, they invite other peers to play.

> ***CH10F***: *I like her because ehm, she likes let me join.*
> ***R***: *Mhm. She lets you join the games. […] How does she lets you join?*
> ***CH10F***: *Ehm, she lets me join in, because I sometimes see her not- playing with no one, so I say ehm 'Do you want me to, play with you?' and she said 'Yes'*
> ***R***: *Okay.*
> ***CH10F***: *[and] then we went to play em It and Duck-duck-goose*
> ***R***: *Duck-duck-goose. Okay. So sometimes she plays on her own.*
> ***CH10F***: *((nodding))*
> ***R***: *Okay. That's very kind for you to join her play. (.) And can you maybe tell me more how-*
> ***CH10F***: *So like, sometimes, em, we like em, ask CH12F or CH12, ehm to play, because em, we need more people, and if they're not, em, e, if they're like sick or away, we just go and play with someone else.*

Further to joined play and playful behaviours, friends in mainstream settings appreciate emotional support from children with DLD.

***R**: What is it that you really like about [CH12]?*
***CH12F**: Ehm, that she likes to play with me a lot and that she sometimes comes and looks after me.*
***R**: Alright. How does she look after you?*
***CH12F**: Ehm, sometimes I get a bit upset, so she comes to look after me.*

***R**: So is there anything else that you like about [CH13]?*
***CH13F**: [Mmm] (.) (.) She makes me happy*
***R**: How does she make you happy?*
***CH13F**: And plays with me when, when, when I'm upset.*

To summarise responses in both settings, friends appreciate playfulness, humour, support and care in children with DLD.

7.3.1.3 What peers do not like about their friend with DLD

Friends seem to find it difficult to describe what they do not like in children with DLD and only six responded to a direct question about the drawbacks of children with DLD. Two of these friends talked about children in the Enhanced Provision and mentioned their behaviour.

***CH1F**: Ehmm…ehm. we sometimes, when we play with him, he ehm, doesn't really listen to us but sometimes he does listen to us.*

***CH3F**: …every time I see [CH3] don't play with me, he just runs away sometimes.*
***R**: Does he?*
***CH3F**:((nodding))*
***R**: He doesn't want to play? Okay. Why do you think is that? Where does he run to?*
***CH3F**: He maybe runs to em, to go and hide somewhere.*
***R**: Mhmm. So what do you do then?*
***CH3F:** Then I go and play with someone else.*

These examples resonate with withdrawal and imply that the behaviour of children with DLD may be misinterpreted by their friends. If children with DLD find explaining their intentions difficult, friends may not understand or even like how children with DLD can behave.

In children with DLD from mainstream classroom, friends do not like selfish and mean behaviours during play.

***R**: Is there anything that you maybe don't like about him. You know sometimes=*
***CH4F**: =when he annoys me.*
***R**: And how does he annoy you, what does he do?*
***CH4F**: When I wanna play with him and he says,'n, no I wanna play by myself'*

***R**: Does he do that?*
***CH4F**: When I went for him and then he just goes over to his other friend.*
***R**: Alright, aah. D'you know why that might be?*
***CH4F**: Mmm ((intonation as if I don't know))*
***R**: Mm. (.)*
***CH4F**: He thinks, I'm just annoying him when I wanna play with him. When I wanna, when I keep asking him to play with me, when he's on his bike.*

***CH4F**: I thought he was a bit greedy when I first met him.*
***R**: Really? Why, what makes you think that?*
***CH4F**: A small (bit)*
***R**: Mm?*
***CH4F**: Mm, I don't know. 'Cause he was. I don't know.*

CH10 and CH12 are part of a bigger group of close friends, who observe more complex unpopular behaviours.

***R**: You've also mentioned something about CH10 that you don't like when she says things.*
***CH12F**: She is always whispering things into CH12's ears about me, which like mean like,"why do we have to play with her" 'Why does she always have to follow us? She is always saying "stop following us" when I just wanna play.*
***R**: Mhmm. Okay. So how do you know what she's [CH10] whispering to CH12? Can you hear or…?*
***CH12F**: I can't hear but I know she is saying it because she would normally be doing that.*
***R**: Mhmm*
***CH12F**: Once she said it quiet loudly into [CH12]'s ear, so I could hear it.*
***R**: What does CH12 do then?*
***CH12F**: She normally just goes with it.*

To friends, the less liked characteristics in children with DLD relate mostly to play behaviours. In mainstream settings, unpopular behaviours seem more complex as their peer relationships tend to have a more intense dynamics.

7.3.1.4 Disputes in friendships

Friends report that the communication difficulties that children with DLD experience could result in conflicts between them or with other peers in the class. A friend of CH1 does not like when CH1 believes that their friend would try to wound them up.

***R**: I've already asked you that sometimes people fall out or have arguments, and I'm not sure if you might have ever fallen out with CH1 or=*
***CH1F**: =yeah.*
***R**: Yeah?*
***CH1F**: Because sometimes he, ehm, 'cause some other people wind him up and tap him on a shoulder, then he thinks it's us. And we say, no [CH1], stop. But he just keeps on doing it.*
***R**: Mhmm. So, somebody taps him on a shoulder and he thinks it's you?*
***CH1F**: Yeah*
***R**: What does he do then?*
***CH1F**: He chases us.*
***R**: Aaah, I see, okay. Yeah, 'cause he thinks it was.. mm.. And so how does it usually finish?*
***CH1F**: Eehm, I er, I don't really know.*
***R**: Mhmm. And how do you feel about it, like, when that happens?*
***CH1F**: Ehm, quite disappointed.*
***R**: Hmm. And why, why is it that disappointment? Because he thinks it's you or=*
***CH1F**: =yeah.*
***R**: Aaah. So you think he should really trust you, when you say it wasn't you, that he should*
***CH1F**: Yeah.*
***R**: Mmmm. And does that happen often? [Like]*
***CH1F**: [Sometimes].*

In mainstream children, friends fall out with children with DLD because of other peers entering the relationship. There are more than two friends in the close friendships of CH11, CH12 and CH14, which increases the group dynamics and makes peer relationships more challenging to navigate.

***CH14F**: Though, but then when Hannah is with me and CH14, it doesn't always work out.*
***R**: Mm.*
***CH14F**: Hannah and CH14 have never been friends and I don't think they ever will be friends.*
***R**: Hmm. So, what do you do when they don't get on?*
***CH14F**: Ehm, I just try and stay out of it because I normally don't have anything to do with it, and then it's just them who have got into an argument about what we're doing.*
***R**: mhm, mhm*
***CH14F**: So just try and stay out of it.*
***R**: Cool. It must be difficult.*

> ***CH14F**: Yeah. Yeah it definitely is. Cause CH14 is my friend but then, she gets sad easily, it's sort of hard to play with her when she is sad because she doesn't let anybody talk to her*
> ***R**: Oh really? [Mm]*
> ***CH14F**: [Most] of the time, [when she is up-]*
> ***R**: [not even you?]*
> ***CH14F**: ehm, I don't but, CH14 does, and most of my friends do run away, when they aren't happy. And they won't talk to you the whole rest of the day, is then, it continues in class and they just don't talk to you but then next day, they're really, just fine with you.*

Children make more efforts to navigate through disagreements when their relationships become more complex – there are more close friends or their play preferences may change.

7.3.1.5 Making friends advice to children with DLD

In effort to support children with DLD in making friends and fitting in, their friends were asked about a specific advice they would give them. Most of these advices were reactions to the conflicts that friends may experience with children with DLD.

> ***R**: And what do you think might help, help him to make more friends in the classroom? [What might help?]*
> ***CH1F**: [Ehmmm] To listen to more people, and not get angry with them.*

A friend of CH2 would advise CH2 to capitalise on their strengths when making friends in class.

> ***CH2F:** Always try and help people and then if you see someone stuck at work, because, usually people are quite stuck, and he is finish, he can always go and help them.*

Playing together is another strategy suggested to children with DLD to make friends. If they experience difficulties, friends propose approaching teachers.

> ***CH4F**: Erm, just tell them to play with, with each other.*
> ***R**: Mhm. Okay. That easy. And what if they don't want to? Or what if they don't understand each other?*
> ***CH4F**: Mmm. Just tell the other person, just tell teacher.*

Interestingly, some friends described situations that they orchestrate themselves and which could help children with DLD make friends.

> ***R**: when you, when you play with [CH3] is there somebody else or is it just the two of you?*
> ***CH3F**: It's just the two of us.*
> ***R**: Mmm*
> ***CH3F**: And I try to, erm, er, to make him Matthew play with us too.*

R: *...How do you think he can make more friends?*
CH2F: *Ehm, so when he plays with us, I'll try and (leak) other people come and play with me and then they, and then I'll get [CH2] to play with the other people whose play with us*
R: *Aah, ok*
CH2F: *And then, they can make ne- more friends and then [he'll]*
R: *[mhm]*
CH2F: *and then, the person, I made them talk to will talk to another, some person, and then they will play together and then they're making up more, more and more friends.*
R: *That's very smart! How do you know all this?*
CH2F: *That's, ehm, that's how I really make friends as well.*

Friends therefore could act as gatekeepers introducing children with DLD to more friends.

7.4. Discussion

The current study examined the peer perceptions and friendship quality of children with DLD. We identified their social status and reciprocal friends, whom we interviewed. Considering Enhanced Provision and Mainstream classrooms allowed preliminary comparisons between different inclusive education settings.

The sociometric data revealed that except for one child with popular status, children with DLD had average, rejected, and neglected social statuses, resonating with earlier peer relationship studies (e.g. Andres-Roqueta et al., 2016; Gertner et al., 1994). More encouragingly, the participating children with DLD had more reciprocal friendships and best friends nominations than indicated in previous research (e.g. Fujiki et al., 1999).

We take the social status evidence further and propose that children with DLD from the Enhanced Provision may be at a disadvantage in comparison to those attending Mainstream classrooms. In support, Laws et al. (2012) noted that children with DLD received less negative peer nominations after they moved from Enhanced Provision to full-time Mainstream classrooms. Moreover, inclusive settings may facilitate the development of social interaction skills in children with DLD (Henton, 1998), and in studies with mixed peer groups, children with DLD increased their social bids more than those in a group with children with impaired language and communication (Guralnick et al., 1996b). Thus, Mainstream settings facilitate social interactions skills and can positively impact the peer relationships of children with DLD. The severity of communication difficulties however may

not always allow children with DLD to join mainstream settings and the findings could therefore also reflect differential placement according to social difficulties.

In participants from the Enhanced Provision, the preponderance of neglected and rejected statuses and only one reciprocal friendship (with another child from Enhanced Provision) might be explained by changing classrooms and limited presence in mainstream settings during the day. At the age of 6-8 years, children give more weight to physical interactions when it comes to their understanding of friendships (Hartup 1996; Selman 1980). And so having limited opportunities to interact together reflects lower preference of peers to consider children with DLD from Enhanced Provision as play partners. Perhaps a bigger sample study examining the social status of children with DLD in different classroom settings could validate this hypothesis.

7.4.1 DLD and friendship quality

We now move to discuss our key learnings from the friendship quality interviews. As far as the friends' descriptions of children with DLD, one of the most striking findings is their low recognition of language difficulties in children with DLD. Even when asked directly, friends of children with DLD, especially those from Mainstream settings, do not report limited language as a barrier in their interactions with children with DLD. In children with DLD attending Enhanced Provision, friends acknowledged that language difficulties substantially impede their interactions. This learning may reflect that the severity of language difficulties corresponds with the child's educational setting and children with DLD in Mainstream classrooms can communicate with peers without considerable difficulties. Even though a social desirability bias could play a role in peers' responses, this finding, nonetheless, points at the need to more closely examine the peer perceptions of language and behaviours of children with DLD.

The most remarkable finding though is the inclusive mindset of friends of children with DLD in Enhanced Provision. These friends look for strategies to overcome the language barrier. They support children with DLD either through adjusting their own communication or simply staying connected verbally even if they may not fully understand the child with DLD. Furthermore, some friends showed their inclusive tendencies by inviting other peers to join their play with a child with DLD. These inclusive strategies seem natural to children and so could directly feed into interventions enhancing the inclusive learning environment for children with DLD. In fact, schools implement programmes developing inclusive peer

behaviours (e.g. Fredrickson & Turner, 2003; Meyer & Ostrosky, 2015). However, it is not clear to what extent these interventions pick up or build upon strategies that children come up with in their inclusive mindsets. Strategies fostering classroom friendships in children with special education needs (e.g. Buysse et al., 2003) and specific to children with DLD proved successful in increasing their peer interactions (e.g. Beilinson & Olswang, 2003; Schuele et al., 1995). Thus, the potential to similarly encourage inclusive behaviours in peers should be explored, perhaps through development and testing of pedagogical interventions.

7.4.2 Implications for practice

Our ideas about educational and therapeutic interventions start with handling the topic of inclusion more explicitly. To make inclusive education a reality, placing a child with DLD in a classroom without acknowledging their specific needs to peers may not be enough. Children encounter communication breakdowns, as was the case of an interviewed friend responding to a CH3 without fully understanding them. Although this pseudo-interaction creates a social connection, pretending to understand the message does not benefit the relationship and can make any follow up interactions awkward. The first step towards eliminating confusion in interactions lies in raising awareness of the communication needs of children with DLD. Additionally, there are readily available communication supporting strategies already successfully used with siblings of children with DLD (Donaldson, 2016) and with autism (e.g. Law, 2020). Finding balance in revealing sufficient information without making children with DLD feel uncomfortable is a challenge that can be overcome by consulting special education needs coordinators or even children with DLD themselves.

Similar to peers, sharing the diagnosis and its implications with children with DLD is an important therapeutic area to investigate further. Making children with DLD aware that their peers can struggle with certain aspects of their communication could help them understand some peer reactions. This topic may be sensitive to present to children with DLD; nevertheless, it is equally important for their healthy development and impacts the formation of their identity and agency. Examples of sharing a child's additional needs with classroom peers demonstrate a very positive and authentic way to inclusive practice (e.g. Eredics 2018; Gus, 2000). Although more work needs to be done to identify the most child-friendly and appropriate ways to implement similar activities in classrooms, we should not underestimate the abilities of children with DLD to collaborate on this quest. To illustrate, a dyadic play video recording captured CH2 from the Enhanced Provision taking initiative and showing

their mainstream friend the speech and language intervention room. When retrospectively asking CH2F about this instance, they revealed that they would like to know more about the morning class activities of CH2. Since similar conversations may already be happening and mainstream peers seem to be aware of the differences, sharing the specific communication needs and supportive strategies explicitly but in a child-friendly manner presents a more constructive approach to inclusive education.

7.4.3 Study strengths and challenges

Interviewing friends of children with DLD is the strongest aspect of our study. We took time to build relationships with children and reduce the potential power imbalance between researcher and participant. We adopted a child-centred approach and used art-based activities to make interviews enjoyable. We validated our preliminary findings and clarified ambiguous answers with children at our last meeting. Our study shows the importance of actively involving children in research.

We recognise the generalisability limitations of our qualitative approach. Our small sample size is not fully representative of the population of classroom peers of children with DLD. Although the participating children come from different schools, their experiences may not reflect other settings and geographical locations. Our findings are indicative and represent opportunity for further validation in quantitative approaches. We aimed to decrease the researcher bias by reviewing preliminary findings with the participants and consulting themes with peer researchers before applying them to framework analysis. Intercoder reliability check could have further strengthened our findings.

7.5 Conclusion

To our knowledge, this study is the first one to interview peers about their friendship quality with children with DLD in Enhanced Provision and Mainstream classrooms. We showed that peers do not always perceive language difficulties as a barrier to making friends with children with DLD and find ways to socially connect if facing any communication challenges. Friends further demonstrated their inclusive mindset by acting as gatekeepers to more classroom peers and that can positively impact the socioemotional functioning of children with DLD in inclusive settings. Thus far, inclusive education research seems to be concerned about helping children with different neurodevelopmental profile adjust to the environment. Maybe we should consider how the mindset and behaviours of others actually make children with neurodiverse profiles feel different and look for ways to nurture inclusive mindset in peers.

Chapter 8 Discussion and Conclusions

This chapter concludes the doctoral research project by making some final remarks about the studies that were conducted. It begins by summarizing the key findings, and then presents the scholarly contributions and implications for educational and speech and language therapy practice are presented. The next sections reflect on the research process, outline some of the project's limitations and provide recommendations for future studies.

8.1 Main findings

I aimed to learn about the peer relationships and wellbeing of children with Developmental Language Disorder (DLD). My goals were to involve children in my investigation and identify the key within-child characteristics promoting the friendships of children with DLD. The motivation for this project stemmed from previous research on peer relationships of children with DLD which relied on adult proxies. I aimed to extend this literature and promote children's voices in research about their social lives. The upcoming subsections will present the key findings and discuss how they relate to the project's aims and the overall literature of peer relationships of children with DLD.

8.1.1 Children with DLD can actively participate in research about their lives

The first key finding is that research directly involving children with DLD can reveal a lot about their peer relationships. Initially, my pilot study, which targeted children's wellbeing and used more traditional self-reports, did not reveal many meaningful results. There was not much variance in the results when using well-established measures such as the Stirling's Children Wellbeing Scale (Liddle & Carter, 2015) and selected Kidscreen52 subscales (Ravens-Sieberer et al., 2001), and these measures did not encourage children with DLD to share their emotional wellbeing experiences. Therefore, I moved from the traditional self-reports to semi-structured interviews, which had to be complemented with adult reports, sociometric measures and observations.

Alterations in the data collection procedures including adjusting the traditional, question-and-answer-based interviewing to child-centred and multimodal approaches helped children with DLD reveal their insights about friendships. This case study approach allowed for the exploration of the social functioning of children with DLD in school (Chapter 5) and

children's conceptions of friendships (Chapter 6). Following the same approach, the participants' friends described the children with DLD and revealed the within-child factors that they appreciate in children with DLD (Chapter 7). Eliciting children's insights about friendships and adapting participatory research methods to complement the findings from other studies in this area as noted in the systematised literature review (Chapter 4), revealed a very limited participation of children with DLD in studies about their peer relationships. Although researchers tend to rely on adult proxies (Farmer, 2000; Yew & O'Kearney, 2015), the present project demonstrates that children with DLD and their peers as young as 6-8 years of age, can be actively engaged and participate in studies exploring their lives.

The application of participatory research was limited in the extent to which a true participation can be claimed. The key aspect impacting children's participation levels was around the issue of power imbalance outside of my direct interactions with children during data collection. Since I decided on the research objectives and design, lacking children's involvement in shaping the research goals and methods does not allow for considering children as consultants. The project reached the lowest participation level of Hart's (1992) Ladder of Participation – Assigned but informed. Nevertheless, there were elements of consultation, which is the next level on the Ladder. Children with DLD participated in piloting the methods that were adjusted based on the collected results. Although Laws and Mann (2004) consider this strategy as enhancing children's participation at the research design stage, I did not ask children about the appropriateness of the methods or let them decide what methodological approaches should be used in the main study. Another element of consultation involved children's validation of preliminary findings in the main study. Participating children confirmed, clarified, and elaborated on their earlier responses. Still, children did not participate in the decisions made about the project goals and design. Therefore, the Consulted and informed level of participation was not reached.

Other aspect limiting children's participation was around their opportunities to join the project. Although participatory research involving children is often deemed as 'empowering,' Gallacher and Gallagher (2008) question this idea because adults act as gatekeepers. By enabling children to join the study, adults (e.g., carers, teachers, researchers) remain in the empowered position. Essentially, this project depended on adults' responsiveness to leaflets, emails, and social media posts advertising the study as well as on carers' judgment about their child's readiness to participate in the study. While the partial role of adults as gatekeepers is to protect children (Horgan, 2016), there may be other reasons (e.g., lack of interest,

inconvenience, lack of understanding the research process) that may restrict children's opportunities to participate in research projects. I received low response rate to my efforts for identifying participants. Although the reasons behind this are not clear, my experience demonstrates one aspect of adult-child power issue that may constrain participatory research with children.

Since I had limited options to eliminate practical restrictions to children joining the study, I strived to address the issues around power and representation of children's voice during data collection. I started with making every effort to ensure children with DLD and their friends understand the project. I described the project in a child-friendly way – *to learn about how children make friends so that I can help other children making friends in school*. I further explained that I would like to talk to them because *they are the experts in friendships in school, since it has been many years when I was a child at school*. I ensured their voluntary participation by repeatedly seeking their assent to be part of the study before every one-on-one meeting. In line with Cocks (2006), I expanded the idea of assent to the entire meeting and stayed attuned to children's engagement levels. Depending on "their actions and reactions towards me" (Cocks, 2006, p.258), I continued with the meeting or explained that it is okay if they do not feel like talking to me and that they can decide to leave at any stage.

Furthermore, I followed a couple of strategies to overcome a potential social desirability bias. This is when children may feel the need to 'please the interviewer' (Hart, 1992, p.15) and join a study or respond with the 'right' or 'expected' answers. First, I strived for creating a trusting, power-imbalanced relationship through our interactions. For example, I let children choose their seat; I demonstrated the Circle of Friends activity, laughed at my drawings, and draw a friend outside of circles, with whom I did not play often. Generally, I restricted my comments, let children speak and elaborate on their responses. When children described scenarios, in which they did not get on with peers, I responded with empathy and positive regard, such as '*It must be difficult.*' Second, I aimed to give children positive and playful experience from their participation. Multiple prompts (e.g., drawing, school tour guide, art, and craft) of data collection and child-centred approach gave children a choice about the way that they want to express themselves. To illustrate, I followed CH11 when they started dancing or CH6 as they talked about their classroom peers pictured that were posted on the wall. Equally, children were not restricted on the scope of ideas that they expressed. As a result, eliminating the power-imbalance and multi-modal means of data collection addressed

the social desirability bias and facilitated participation beyond tokenism during child-adult researcher interactions.

As demonstrated by my project, the participation of children with DLD in research can be facilitated by adjusting research methods and procedures to accommodate for the children's needs. Many scholars already adopt art-based and visual supports (e.g. Brinton et al., 2000; Merrick & Roulstone, 2011) and obtain assent from the children (e.g. Markham et al., 2009; Gough Kenyon et al., 2020). However, children's participation in research can be restricted by power inequalities when adults determine the project goals, design, or whether children can join a study. Some of these adult-child power issues could be addressed by promoting and raising understanding about the need for children's participation in studies and projects impacting their experiences. In fact, DLD relevant organisations, including the Royal School of Speech and Language Therapists (Chadd et al., 2020) and the Engage with DLD (2019), make calls for direct involvement of individuals with DLD in the research. As my project shows, child-centred and multimodal approaches support children with DLD to engage in research about their lives and may need to be expanded beyond the data collection phase.

8.1.2 Quality and quantity of language and behaviours should be considered as distinct within-child factors, influencing the peer relationships of children with DLD

The second fundamental learning in this project relates to the within-child factors associated with the peer relationships of children with DLD. First, there was not just one distinct within-child factor that would clearly point at the characteristics that may help or impede the relationships of children with DLD. Instead, specific attributes within the previously considered factors (e.g. language, behaviour, social competence) were identified. For example, my findings build on previous studies, which tend to consider language and behaviours more generally when comparing the peer acceptance of children with DLD and their typically developing classroom peers (e.g. Gertner et al., 1994; Laws et al., 2012). The systematised literature review highlighted that the social use of language (quality) as opposed to the number or length of utterances (quantity) contributes to the positive peer relationships of children with DLD. The converse relationship is true for behaviours where instead the number of interactions (quantity) were more important for peer acceptance than the positive or negative way (quality) of interacting. For example, the number of words or vocabulary knowledge (quantity) are less important in how efficient children are in using language to

reconcile the conflict (quality) (Bakopoulou & Dockrell, 2016; Horowitz et al., 2005, 2008; Marton et al., 2004). Active interactions, such as frequently approaching and responding to peers (quantity), are associated with positive peer relationship more than ability to collaborate or resolve conflicts (quality) (Guralnick et al., 1996a; Liiva & Cleave, 2005). Peers can interpret the low responsiveness in children with DLD as lack of engagement or interest. As a result of the distinct contributions of quality and quantity, this project supports examining these attributes to allow for a more fine-grained understanding of how language and behaviours contribute to the social functioning of children with DLD.

Quantity and not so much the quality of interactions seem to contribute to the acceptance of children with DLD among their peers. For instance, collaboration behaviours showcase the qualitative and quantitative behavioural differences between children with DLD and their TD peers. Children with DLD tend to watch their peers and play individually more often despite displaying positive collaboration (e.g. helping, sharing, controlling temper, handling criticism well) when working on a joined task (Brinton et al., 1998, 2000; Liiva & Cleave, 2005; Murphy et al., 2014). Children with DLD are more likely to ignore their TD peer's requests or questions (Murphy et al., 2014), which could give their TD peers an impression that they are not interested in interacting with them. The reasons for these missed opportunities to engage with their peers need to be explored in future research as increasing the rate of the interactive behaviours could have a positive impact on how children with DLD are being perceived by their peers. Peer acceptance of children with DLD could improve, benefiting to social inclusion and the social-emotional development of children with DLD

8.1.3 Alternative social competence measure reveals variability in the understanding of good and bad friends in children with DLD

The next within-child factor finding relates to psychosocial attributes, specifically the social competence and wellbeing that I initially considered as strong contributors to the peer relationships of children with DLD. The systematised literature review confirmed some of the previously researched aspects such as social cognition and self-esteem as contributors to the peer relationships of children with DLD (e.g. Bakopoulou & Dockrell, 2016; Jerome et al., 2002). Furthermore, my direct engagement with children with DLD expanded on the methods used for assessing the social competence. When examining the social competence in children with DLD, I learned that context specific assessments give more meaningful results as opposed to more traditional task batteries examining Theory of Mind (ToM), emotion

recognition and knowledge. Although the traditional ToM assessment tools are commonly used among researchers, my systematised literature review noted performance inconsistencies as children with DLD do not always fare differently from their TD peers (Andres-Roqueta et al., 2016; Farmer, 2000). Inconsistencies further exist within individual children with DLD, as some score well on ToM tasks but not on emotional recognition assessments and vice versa. I observed these differences in the series of case studies when some children with DLD failed the first ToM task but passed the second. This observation aligns with ToM research in autism, that proposes the existence of various developmental levels of ToM, not simply its presence or absence (Rajendran & Mitchel, 2007).

Additionally, my research found that children with DLD who did not pass the ToM tasks were well accepted by their peers. This questions the validity of traditional social cognition measures in the assessment of positive peer relationships (e.g. Bloom & German, 2000; Ghrear et al., 2021; Osborne-Crowley, 2020). The measures use mostly static pictures, which do not resemble the reality of social interactions, and are often positioned outside of the broader context of interaction (Bloom & German, 2000; Ghrear et al., 2021). This may result in the curse of knowledge- a cognitive bias caused by the lack of background knowledge of the presented scenario- impacting children's performance on the task (Osborne-Crowley, 2020). The traditional tasks can be useful for exploring the possible difficulties of reasoning about scenarios representations, or isolated mechanisms of social cognition (Bloom & German, 2000). However, these measures do not have the ecological validity needed for peer relationship studies. The static nature of the tasks and the context of scenarios presented in traditional assessments may not resonate with children with DLD or may require higher levels of abstract thinking. Therefore, I explored an alternative way to evaluate the developmental levels of understanding others in children with DLD and make the assessment of social competence development more applicable to peer context.

Using Selman's (1979) *Friendship formation* measure, I observed variability of sophistication in understanding of *Friendship formation* within and across children. Although this variability aligns with findings from more traditional social cognition assessments, the key value of the measure is the ability to understand the variability in developmental levels of peer relationships. For example, the children with DLD had the lowest levels of social understanding in the domain of a friend characteristics. They distinguished between a *good* and a *bad* friend by describing friends' physical attributes, presence in play activities and one-way assistance. Running fast, playing nicely, helping and other prosocial behaviours were

associated with a *good* friend. A *bad* friend has a 'bad boy haircut,' runs away, behaves naughty, pushes children, and is mean to others.

While the 6-8 age bracket of the sample with DLD is within the age range when friendship conceptions develop, a higher level of recognising friends from non-friends (e.g. shared interests) has been found in much younger, 3-4-year-old typically developing children (Liberman & Shaw, 2019). In fact, the levels of understanding *good* and *bad* friends in children with DLD correspond more closely with friendship understanding in 9-11-year-old children with autism (Calder et al., 2013). These findings shed light on potential reasons for peer relationships difficulties in children with DLD, who tend to be less accepted and more vulnerable to negative influences of more mature peers compared to TD children. Moreover, the friendship relevant assessment of social competence provides specific areas to develop in therapeutic and educational practice.

8.1.4 Self-perception and self-awareness as within-child factors contributing to the peer relationships of children with DLD

In addition to examining social competence, my research project specified additional psychosocial attributes that should be investigated in future research, including the self-perception and self-concept of children with DLD. When asking children with DLD about their perceptions of friends and wellbeing experiences, I found that they had limited ability to self-reflect and appraise their own emotional wellbeing. Children had a limited range to convey their emotions– happy, sad, cross, or annoying. Although some wellbeing data was collected, it referred to general wellbeing as opposed to peer relationship experiences. A specialized coding scheme needs to be developed to analyse the wellbeing with regards to peer experiences of children with DLD. The project's focus on friendship along with the limited resources did not allow for full analysis of children's subjective experiences in school in this report. Nevertheless, I plan to further analyse these data as part of postdoctoral research to find out *What is the perceived wellbeing of children with DLD? How do peer relationships influence the perceived wellbeing of children with DLD? In what ways does DLD come up in the perceived wellbeing of children with DLD?*

Poor self-reflection and self-awareness regarding friendships brings into question the children's awareness of their language difficulties. Indeed, the children with DLD did not report that their language or communication could be an obstacle when making friends. In fact, it was not clear whether the sample with DLD were aware of their diagnosis or how they

perceived their language abilities. This finding contrasts with previous studies conducted with 9-12-year-old children with DLD, who reported being aware of their language and communication difficulties and how they impact their peer interactions- being unsure about the topics to bring up with peers, having poor speech (Lyons & Roulstone, 2018). In other interview-based studies, 7- to 11-year-olds children with DLD talked about their low communication skills, which was the key topic of the projects, and children with DLD had broader Speech, Language, and Communication Needs (SLCN, Merrick & Roulstone, 2011; Roulstone & Lindsay, 2012). Although the present project asked about broader difficulties in making friends, the children did not report on their language and communication. Similarly, most of the children with DLD found it easy to make friends and those that did find it hard linked their difficulties to non-communication related reasons such as not knowing the other child or the environment.

The differences in self-awareness findings between this project and those of previous studies could be the result of broader individual differences and natural development. The slightly older participants in Lyons' and Roulstone's (2018) study might have simply been more mature in their neurodevelopment. Neuroimaging studies show that areas in the prefrontal cortex are activated when retrieving self-knowledge, and middle to late childhood is a crucial neurodevelopmental period for social cognition (Pfeifer et al., 2007; Ray et al., 2009). However, the development of self-concept continues throughout late childhood to young adulthood and the specific area of development- physical, social, academic- varies with age (Selman, 1980; van der Cruijsen et al., 2018). The construction of self at neural level goes beyond age-related neurodevelopment, and is affected by family, social, cultural, and emotional experiences (Heatherton, 2011). Theorists including Harter (2012) and Damon and Hart (1991) have outlined the developmental stages of social cognition that are relevant to self, which may be useful for a more in-depth exploration of different self-constructs in children with DLD. The important developmental links with the findings of the current project as 6- to 8-year-olds would remain in the period when children with DLD still do not perceive their language and communication as hindering their peer interactions.

Alternative interpretations of the perception of friends and wellbeing data relate to language levels in participating children with DLD. The abstract nature of both constructs can create additional barriers to children's comprehension and expression. In typically developing children, acquiring abstract vocabulary is linked with emotional experiences until the age of nine to ten years, when the non-emotional abstract words (perceptions) follow (Vigliocco et

al., 2017). Since children with DLD experience general difficulties in developing abstract and concrete vocabulary (Ponari et al., 2018; Vigliocco et al., 2017), the participating 6-8-year-old children with DLD may have found it especially hard to understand and express their perceptions of friends and wellbeing experiences. Therefore, it is possible that abstract vocabulary knowledge may be the key limitation to the participants self-reflection and self-awareness.

Another possible interpretation brings into question the ability of the research methods to access the perceptions of friends and wellbeing experiences in participating children with DLD. Despite using a variety of art-based tools, children may have been limited in expressing their perceptions and wellbeing as abstract concepts. Perhaps deploying photovoice or play-based tools such as role play or puppet show could be a creative alternative to eliciting children's emotions and perceptions (Blaisdell et al., 2019; Clark & Moss, 2011). Similarly, sorting cue cards following Q methodology (Ellingsen et al., 2014) or computer-assisted interviewing using avatars could assist children in eliciting their perceptions, feelings, and concepts (e.g., Fangstrom & Eriksson, 2020; Hsu & Teoh, 2017). Although alternative tools could help assess children's conceptions and experiences, it remains questionable whether children would reflect on their limited language without prompts. Therefore, even if alternative tools had been used, they would have to be designed within the remits of exploratory nature of this project.

8.1.5 The importance of peers' inclusive attitudes as a within-child factor

The last but very significant finding in this project taps into within-child factors for the peers of children with DLD. The research methods focused on children with DLD, but their peers' responses revealed that peers' inclusive attitudes and perceptions of language affect the peer relationships of children with DLD. First, the classroom friends of the children with DLD confirmed that language and communication are not considered barriers to their mutual interactions. This was especially true for children with DLD in the mainstream settings. With the minimally verbal children with DLD, who attend the Enhanced Provision, friends apply strategies such as giving play options or responding without a clear message from the child with DLD to stay connected. Friends demonstrated having an inclusive mindset by actively involving children with DLD in their games and introducing them to more classroom peers. Therefore, this project suggests that inclusive education strategies need to be considered at the peer level.

The nature of the language and communication difficulties experienced by children with DLD could be another reason why typical friends in this project did not report noticing the limited verbal resources abilities of their peers with DLD. As demonstrated in the systematised literature review, language quality (use) as opposed to quantity (the number and length of utterances) is more important to peers. This however can be more difficult to observe as most of the children with DLD were rather outspoken and their language difficulties such as disconnected speech and mixed-up stories may not have been apparent to peers or may have been attributed to other factors.

The lack of peers' awareness of language and communication difficulties in children with DLD suggests opportunities to promote truly inclusive classroom settings. Increasing awareness, and teaching children strategies to support the language and communication needs of children with DLD could lead to enhanced peer interactions and relationships. There are many classroom adjustment strategies for teachers to adopt in support of DLD needs (Bercow: Ten Years On, 2018; Roulstone et al., 2012) however, future work needs to explore whether peers can be active agents in promoting inclusion. One possibility could be adopting communication supporting strategies designed for siblings of children with DLD or those with autism (Donaldson, 2016; Law, 2020).

To summarise, the individual studies (Chapters 4-7) in this thesis all inform the overarching goal of identifying the within-child factors contributing to the quality of peer relationships in children with DLD. They build on the social adaptation model (SAM) of Redmond and Rice (1998) to highlight the specific aspects of language and communication, and psychological attributes and behaviours that play a role in how peers perceive children with DLD. Importantly, all enquiries support the use of participatory approaches when conducting research with children and consider children with DLD and their peers as key informants when learning about the peer relationships. Utilising the children's voices themselves, the present project contributes to the scholarship of DLD by updating the SAM.

The key results are summarised by revisiting the SAM in the next section.

8.2 Contribution to the scholarship of DLD

This research project drew upon SAM (Redmond & Rice, 1998) explaining links between the language abilities and behaviours of children with DLD. The SAM asserts that children with DLD compensate for their limited receptive and expressive language by adopting behavioural strategies that others may perceive negatively (Redmond & Rice, 1998). The SAM is a useful

framework for exploring peer relationships of children with DLD because it outlines linguistic, psychosocial, and behavioural areas of within-child factors relevant to DLD. It also includes the child's social situation- the environment, the biases, and the behaviours of others- that may be equal predictors for the social functioning and friendships of children with DLD.

Figure 8.1 captures the details I have added to the originally outlined areas in the SAM. The areas of Communicative demands from the environment, Limited verbal resources, Biases & behaviours of others, Psychosocial attributes, and Compensatory behaviours from the Redmond's and Rice's (1998) model are noted in capital letters and displayed in the grey-coloured shapes. I also provide details of the features of areas that I identified in my project in the white rounded rectangles that are located within the original area (grey rounded rectangles).

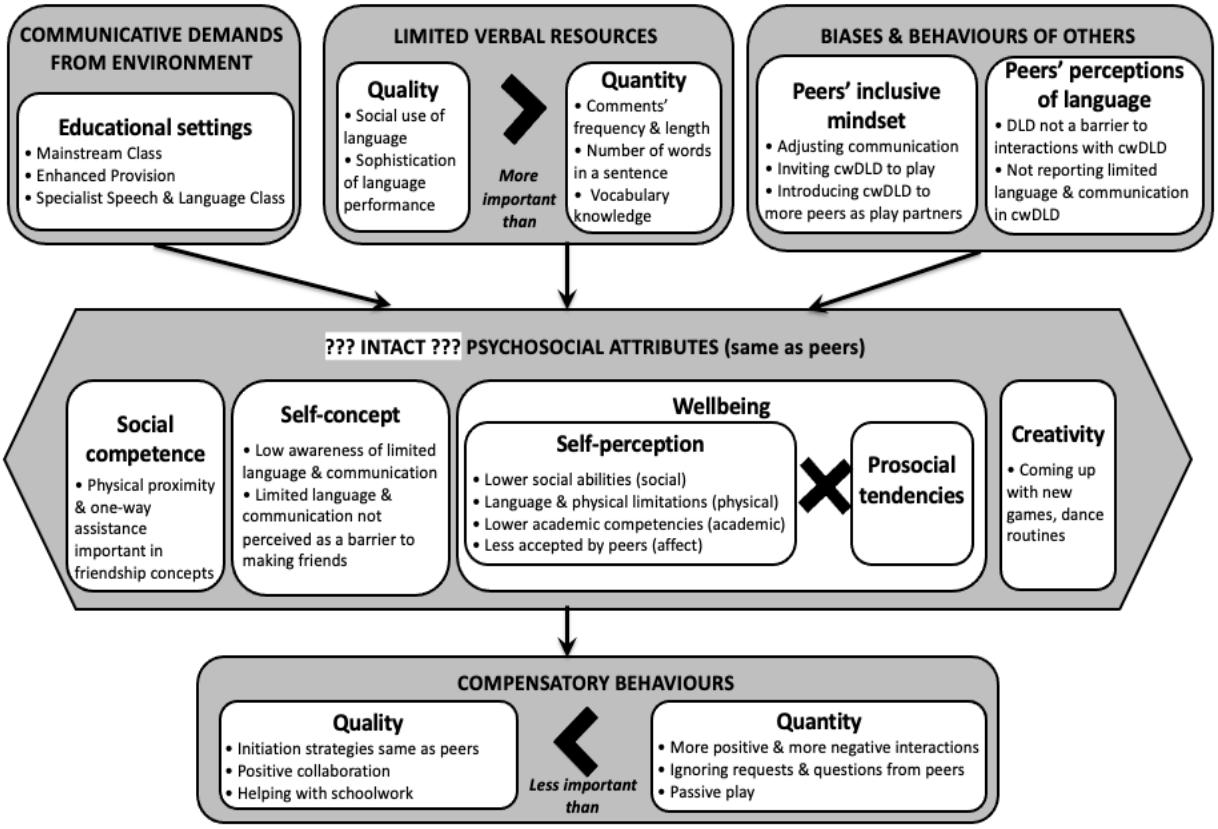


Figure 8.1 Project updates to the Social Adaptation Model

Starting from the top of the model, this project found that different classroom settings reflect the communicative demands from the environment as included in the original SAM

(Redmond & Rice, 1998). In terms of limited verbal resources, this research recognises individual contributions of the quantity and quality of language towards the peer acceptance of children with DLD. The greater than symbol indicates that the social use of language (quality) seems more important to peers than the number of words used or the length of utterances (quantity) of children with DLD. This project highlights the role of biases and behaviours of others by involving peers in data collection. It specifies that peers' inclusive mindsets and their perceptions of language difficulties play a part in the social adaptation of children with DLD. All the aspects specified in the upper part of the model feed into the psychosocial attributes of children with DLD that are captured in the middle of Figure 8.1.

Regarding the psychosocial attributes specified in the central part of the above model, my findings question the original assumption that psychosocial attributes are intact in the SAM (Redmond & Rice, 1998). Although Redmond and Rice propose that psychosocial attributes are impaired in their social deviance model (SDM), they consider this impairment to be driven by an underlying socioemotional trait. SDM assumes a developmental psychopathology whereas my findings point to the contribution of the child's social situation. This is because the areas from the upper part of the model shape individual children's psychosocial functioning, more specifically, their social competence, self-concept, wellbeing and creativity. Within wellbeing, there is a dynamic relationship between children's underlying prosocial tendencies and the way children with DLD perceive their abilities (social, physical, academic) and acceptance by peers. Consequently, the cross ('X') in the wellbeing feature of the model symbolises a potential for an internal conflict within children with DLD, who generally want to engage with peers but may not sufficiently appraise their personal qualities to connect with others. Overall, the psychosocial attributes inform the behaviours outlined downward.

The bottom layer of Figure 8.1 expands upon the original compensatory behaviours specified by Redmond and Rice (1998). From the peer relationships perspective, the quantity and quality of the behaviours need to be considered individually in children with DLD. The '<' symbol indicates that essentially, the types of initiations and prosocial behaviours (quality) may not be as important as the actual number of interactions (quantity) when it comes to peer acceptance.

To summarise, my research findings advance our current knowledge of the social functioning and peer relationships of children with DLD. My studies expand on the areas of the original SAM framework (Redmond & Rice, 1998) and specify within-child characteristics that contribute to the peer acceptance of children with DLD. Although many empirical studies

targeting DLD have utilised the model as a theoretical framework for confirming social adaptation approach in their data, researchers tend to stay away from updating the models with their findings (Forrest et al., 2020; Fujiki et al., 2019). I aim to confirm my findings in future large scale studies and also plan on further exploring the links between the specific features of the SAM as identified in my project. My project underlines the importance of revising theoretical frameworks that allows for a better understanding of how DLD plays out among peer relationships.

8.3 Contribution to education, speech and language therapy, and research

8.3.1 Education

The findings of my project have important implications for the practice of inclusive education. Specifically, mainstream peers interviewed in this project demonstrated inclusive attitudes and behaviours. Peers therefore need to be considered as active agents in truly inclusive education settings. In the UK, the inclusive education policies and efforts from non-profit organisations focus on whole school approaches and teaching practices supporting children with DLD (Department for Education, 2015; I CAN, 2021). The proposed strategies target Speech, Language, and Communication Needs (SLCN) to promote children's academic achievement. This limited perspective is rather startling considering the extent of peer relationship difficulties experienced by children with DLD, and the later consequences of such difficulties upon their mental health. The academic achievement goals should be complemented with guidance on how peers can be involved in creating supportive classroom environments for children with DLD. Unfortunately, there is minimum guidance on how peers can help.

Learning that peers do not generally observe language and communication difficulties in children with DLD does not mean that communication breakdowns do not happen. Peers may not recognise poor language as a difficulty, which implies the potential for raising awareness of DLD. If possible, even sharing the child's diagnosis in classroom can be considered but will require due considerations for consent and measures to avoid undesired outcomes (e.g. bullying, name calling). The generally low awareness, diagnostic, and terminology inconsistencies might have hindered the wider recognition and support provided to children with DLD in the past. In recent years, however, charities and professional communities in the UK (e.g. RADLD.org, Naplic, I CAN, E-DLD) have been actively raising DLD awareness and supporting children, parents, and educators to enhance the quality of life of children with

DLD. Continuing and expanding these organisations' awareness efforts among the caregivers, educators, and peers of children with DLD is the most feasible and immediate solution. For example, they may add DLD to the existing special education needs awareness activities and programmes that schools already deliver.

In a classroom attended by a child with DLD, teachers and educators could, for example, build on a recently published teacher guide from I CAN (2021). The guide instructs teachers to promote peer relationships by encouraging peers to use communication strategies such as pausing and slowing down speech, highlighting the strengths of a child with DLD, identifying a trusting friend and others (I CAN, 2021, p. 30). Individuals with a history of SLCN revealed that they found it helpful when others are accepting, adapt their communication, avoid shouting, listen more, or even do not interrupt them in their work (Dockrell et al., 2014; Roulstone & Lindsay, 2012). Other communication supporting strategies at peer level can be picked up from autism research (e.g. Donaldson, 2016; Law, 2020). Some more child-sensitive suggestions include talking to the child about their DLD diagnosis or even sharing their diagnosis with the class (I CAN, 2021, p.29). Revealing the DLD diagnosis however needs to start with the child with DLD and in cooperation with their speech and language therapist (SLT).

8.3.2 Speech and language therapy

My project informs speech and language therapy goals and practice. It promotes pragmatics - the social use of language, adjusting language to the listener or situation, following conversation rules, and understanding of social inferences - as an active goal in therapy. Usually, pragmatic abilities only become a therapeutic goal when this area of need disproportionately challenges children with DLD. Although pragmatics and structural language are linked (e.g. Bishop, 2000; Frazier Norbury, 2004), the assumption that 'improve language structure and the rest will follow' needs to be reconsidered. Treatments designed to improve language form and content remain critical, but by themselves, they will not address difficulties in social interaction (Gerber et al., 2012). Children's perspectives in this project revealed social pragmatics as the key linguistic skill related to satisfying relationships with peers. Almost all children with DLD had enough verbal resources to approach peers to play. What could be improved is their ability to resolve conflicts and navigate through more challenging situations with peers. Therefore, SLTs need to work with set of goals addressing social relationships alongside language and grammar.

This project further showed that illustrations from Merrick (2009) or Picture Me (Merrick, 2014), which I used in my interviews with children with DLD, could be a useful resource providing enough peer interaction context for children to work with. Picture-based tools have been used with autistic children to enhance their social skills. For example, the Social Stories designed by Gray (1995) use a comic book drawing of a social situation to help children discuss what people said, how they felt, what they may have been thinking and what could have been done differently for a more positive outcome. Therefore, SLTs may consider using art-based tools (e.g. printed illustrations, comic book drawings) especially when working on the pragmatics aspect of children's language development.

Other speech and language therapy goals could involve collaboration with counselling psychologists to support developing children's self-concept- how they feel and see themselves. Thinking positively about themselves seems much more important than generic social skills as they would have better self-esteem and could display more behaviours towards peers, who appreciate the frequency of interactions. However, this recommendation may need to be reviewed for children older than 6- to 8-year-olds, which was the sample in this research project. 10- to 12-year-old peers might be more responsive to the quality of interaction.

This leads to the issue of practices around sharing diagnoses with children and their classmates. Testimonies of individuals with a history of SLCN reveal that receiving a diagnosis can help children understand why they may experience difficulties in school (Sobel, 2019). Therapists could direct children to the www.dldandme.co.uk website tailored to children and young people, who can learn about DLD and about the experiences of those who told their diagnosis.

My final recommendation to speech and language therapy practice is to foster collaborations and multidisciplinary work between SLTs, teachers, and child and adolescent mental health services (CAMHS). SLTs could support teachers with implementing the education-relevant recommendations of raising awareness of DLD among peers and involving them in creating inclusive classroom. Working with teachers will optimise the impact of any SLT interventions - reinforcing targets, offering more opportunities to display the communication behaviour, and helping with consistency of expectations/rewards across several settings. Collaborating with CAMHS will prevent missing out potential SLCN in children referred to mental health services for displayed emotional and behavioural problems. Language and communication difficulties impact children's lives in many ways. Therefore, it is important that professionals

working with children outside of speech and language therapy are well-informed and have close links with SLTs to best support children's needs.

8.3.3 Research methodology

The final area of contributions of my project focuses on the methodology. The qualitative and multimodal approaches that I used allowed for the advancement of research with children with DLD with regards to their peer relations. Building a rapport and developing mutual trust is key, especially when asking children about sensitive topics, such as their peer interaction experiences. When researching similar topics, I would recommend that studies include multiple meetings and observations. Observing children in the classroom and playground gave me ideas and specific situations to inquire about when interviewing the children. In researching themes similar to relationships and wellbeing, I would recommend an even more engaged approach including ethnographic elements.

Considering their difficulties with language, my case studies of children with DLD employed complementary tools to help overcome communication barriers. Having art-based and visual supports at hand supported my flexibility in eliciting data from children with DLD by identifying their preferred communication method. Illustrations were particularly useful in presenting abstract notions of peer interactions, such as being ignored. I adapted the narration-based approach and started with inviting children to organise Merrick's (2009) illustrations under categories – happy/right, okay/unsure, sad/wrong, as illustrated in the Figure 8.2.

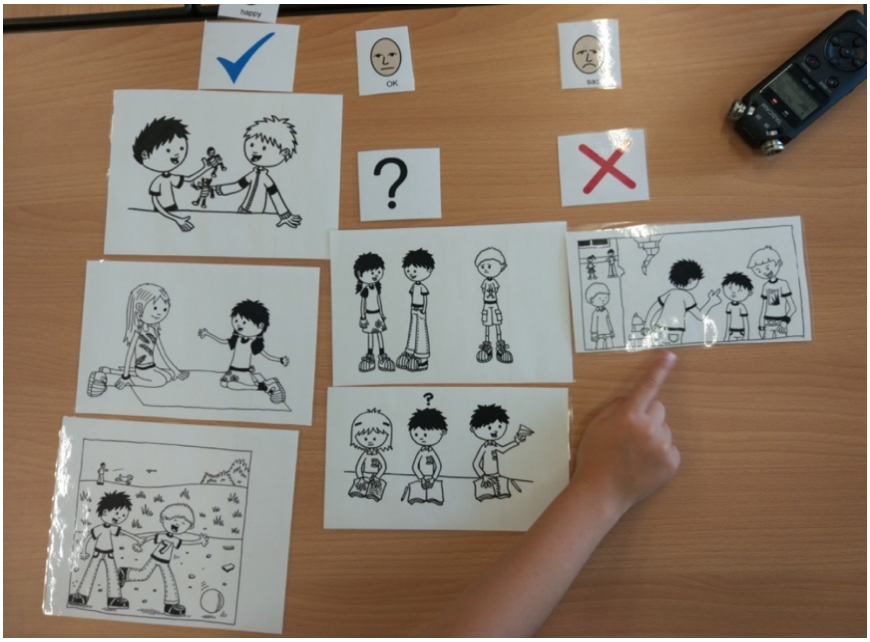


Figure 8.2 Adapted illustration-based method in interviews with children with DLD

Adapting the use of illustrations and introducing categories gave me an initial idea about the way children perceive the portrayed situations. Especially, the undecided category helps learn how children think about the situation and if there were any discrepancies in their understanding of what was going on. When involving children, I would recommend similar adaptation to methods. Introducing categories made the activity more dynamic and helped keep children engaged. They had a sense of achievement because I gave them stickers for completing each part of the activity. I further supported engagement by praising children, even though there are no right or wrong answers. Children however did not reveal a variety of potential emotional responses or identify with the scenarios in school, which was one of the goals for using this tool. Nevertheless, using illustrations helped children with DLD to speak and many of them gave descriptions of the illustrations (e.g. this girl has a long hair). Some children spoke about similar interactions with their siblings, and so it may be useful to develop illustrations capturing the school context more clearly.

The Picture Me (Merrick, 2014) illustrations reflected school settings (Figure 8.3). I invited children to point at a child that looks most like them and elaborate on the reasons why. The aim was to elicit children's thoughts and feelings about their social functioning in school. However, illustrations seemed rather situations heavy and again, children happened to describe what was going on in a number of scenarios.

Figure 8.3 "In the classroom" (Merrick, 2014; illustration by Helen Stanton) © J&R Press, used with permission.

Children with DLD could not identify with the situations, which could be attributed to their lower self-reflections discussed earlier or to their experiences with similar SLT assessments, instructing children to describe what is happening in a picture to elicit the mean length of utterance, vocabulary, social understanding, etc. Many children were looking for patterns across the illustrations (e.g. finding the same child in a number of pictures) or described what they do in the class without talking about their peer interactions. This somewhat confirms the earlier assertion that it may be difficult for children with DLD to self-reflect when they are at the age of 6-8. Other interactive tools such as puppets or role play might better support the self-reflection of children with DLD. Similarly, asking children to bring in their favourite toy or an object they like in the classroom could help elicit some emotional responses linked to friendships.

To collect data about social understanding of children with DLD, I would recommend moving from the more traditional ToM and emotional recognition and knowledge tools. The traditional vignettes and stories can be language heavy and similar to the illustration experience, may not support children in identifying with the presented scenarios. The Selman's (1979) framework was a beneficial tool for assessing children's social understanding because it elicits children's direct experiences. It has well-established methodological procedures, assesses multiple domains of understanding others and self, and can be flexibly used to focus on various areas of understanding self, friendship, peer-groups and parent-child relationships (Selman, 1979). Research involving children with DLD could use this measure to evaluate the social-cognition development of their participants within a context of their real-life experiences.

8.4 Strengths and limitations of the research project

In this research project, exploring the peer relationships in relation to a complex DLD profile while actively engaging children were innovative but ambitious aims that had to be balanced with limited PhD project resources. My qualitative approach aimed to complement the more frequently encountered quantitative studies in this area. Quantitative studies report that children with DLD tend to be less accepted than their TD peers, but qualitative studies can reveal children's experiences and perceptions of their peer relationships and interactions. Furthermore, this qualitative project produced rich data resulting in identifying new variables that can be analysed at a larger scale using quantitative methods. Qualitative studies in this area can complement and expand on the findings of quantitative studies.

By engaging children with DLD and their peers, this research project further adds to the few studies conducted with young adults with DLD as well as their peers. To enhance the credibility of qualitative findings, I conducted data collection on a number of occasions and used a variety of methods (e.g. art, sociometric nominations, validation interviews). However, the trustworthiness of interview results could have been strengthened by establishing inter-rater reliability. Initially, I did not consider this quality assurance step due to the case study nature building on my insights from directly observing and interacting with children. However, given the way that this research project has unfolded, the analyses of Chapter 6 and Chapter 7 could have been strengthened by involving another researcher. Chapter 6 examines the concepts of *Friendship formation* in children with DLD, and Chapter 7 explores the peers' perceptions of children with DLD as friends. To make both chapters readily publishable, I am planning to address the inter-rater reliability.

The limited time and labour account for the shortcomings of the first part of this PhD project – the systematised literature review. The quality of the reviewed studies was not appraised, the abstracts were not double screened and inter-rater reliability is not reported for the inclusion/exclusion decisions. Discussions with my supervisor, however, helped with making decisions about studies that I was not sure of. In addition, the list of excluded studies is included in the study appendices to enhance transparency (Appendix B). Despite its limitations, the review was published in 2021 in Autism & Language Impairments journal. Going through the peer review process provided encouraging evidence that this study's contribution to the field outweighed its limitations.

The methodological approaches in the second part of the research also have a couple of limitations. The application of participatory research was limited in the extent to which a true participation can be claimed. In line with Hart's (1992) Ladder of Participation, the project reached the lowest participation level – Assigned but informed. I decided on the research objectives and design; therefore, the lack of children's involvement in shaping the research goals and methods does not allow for considering children as consultants. However, children helped validate preliminary findings, confirm, and elaborate on their earlier responses. I made every effort to ensure children with DLD and their friends understand the project. I described the project in a child-friendly way – *to learn about how children make friends so that I can help other children making friends in school*. I further explained that I would like to talk to them because *they are the experts in friendships in school, since it has been many years when I was a child at school*. I ensured their voluntary participation by repeatedly seeking their

assent to be part of the study before every one-on-one meeting. I explained that it is okay if they do not feel like talking to me and that they can decide to leave at any stage.

I followed a couple of strategies to overcome a potential social desirability bias, when children may feel the need to 'please the interviewer' (Hart, 1992, p.15) and join a study or respond with the 'right' thing to do. First, I strived for creating a trusting, power-imbalanced relationship through our interactions. For example, I let children choose their seat; I demonstrated the Circle of Friends activity, laughed at my drawings, and draw a friend outside of circles, with whom I did not play often. Generally, I restricted my comments, let children speak and elaborate on their responses. When children described scenarios, in which they did not get on with peers, I responded with empathy and positive regard, such as '*It must be difficult.*' Second, I aimed to give children positive and playful experience from their participation. Multiple prompts (e.g., drawing, school tour guide, art, and craft) of data collection and child-centred approach gave children a choice about the way that they want to express themselves. To illustrate, the researcher followed CH11 when they started dancing or CH6 as they talked about their classroom peers pictured that were posted on the wall. Equally, children were not restricted on the scope of ideas that they expressed. As a result, eliminating the power-imbalance and multi-modal means of data collection addressed the social desirability bias and facilitated participation beyond tokenism.

Participatory research required careful ethical consideration and preparation of language and communication supporting tools. Nevertheless, my experience from using and adjusting the existing tools contributes to the current practice of research methods and adds value to the project. Still, time spent in preparation for interacting with children with DLD and dedicated to build rapport came at a cost of other aspects of the part two of the project, such as the amount of details that were reported.

This research project contains limited diagnostic information regarding participating children with DLD. Obtaining this detail would have caused additional delays in identifying participants due to ethical implications and data protection measures that need to align with the Health Research Authority guidance. Instead of gathering children's medical records, I identified participants based on the expert views of teachers, Special Education Needs Coordinators, and SLTs, who made referrals to the project. I also collected the language and communication profile data through parental questionnaires and using the widespread linguistic and performance IQ tools when meeting with children with DLD. Considering that a diagnostic profile is only a snapshot in time, not regularly repeated, and that children's

abilities keep developing, my direct measurements aligned with the case study approach to better understand children's current social functioning. My direct interactions with children further enhanced my comprehension of how children's profiles unveil in their social interactions.

I aimed to recruit children with DLD. However, on reflection, the group finally recruited to the study was extremely heterogeneous and included some children with probable autism and multilingual children. As I mentioned, the reasons for this were the lack of objective measures of children's language abilities, practical limitations such as GDPR and time restrictions, and inclusive approach to sample criteria. Children's with DLD were identified based on the referrals from SLTs, parents, and educators. I identified children's profiles based on data from parents (Children's Communication Checklist-2, Frazier Norbury et al., 2016) and the assessment that I conducted directly with children. Six participating children with DLD (CH1, CH, CH5, CH6, CH7, and CH9) were bilingual but I did not obtain data on children's language development difficulties in the other language. Adopting this inclusive approach may mean that my sample does not meet the technical definitions of DLD. Nevertheless, my sample reflects the heterogeneity of children whom SLTs, parents and educators identify as having DLD needs.

In addition, my sample reveals the complex reality of working with children with DLD. As I reflected in Chapter 5, I often would not have noticed children's language difficulties because they could convey the message even if, at times, they used simple language, disrupted the sequences of words, or produced incoherent phrases. This could be related to the fact that DLD impacts language expression and comprehension. Although I did not explore the specific roles of expressive and receptive abilities in peer relationships, my project reflects the reality of how children's DLD difficulties can manifest and be perceived during their interactions with others. Providing many participating children with DLD could verbally express their ideas and that comprehension difficulties are generally harder to detect, poor receptive language could be linked with DLD as an 'invisible' disorder.

Additional methodological limitations relate to the sociometric assessment of peer and best friend nominations. First, the measures give only a snapshot in time, and it is likely that children's responses reflected their recent encounters with peers. Physical proximity and time spent with peers could have impacted children's answers. Coie and Dodge (1983) confirmed a year-to-year stability of the peer nomination across social statuses; however, individual differences need to be considered. This project did not reassess the social status categories of

children with DLD but looked for peer perceptions as background information. The best friend nomination measure did not revert reciprocal or nominated as best friend results in three children with DLD. Therefore, the friends of CH1, CH3, and CH6 were identified by teachers. The measures do not provide reasons behind the nominations, which is another limitation of their use.

Second, children may not make a clear distinction between peer and best friend nominations. I tried to present the constructs differently. I described nominations in light of a preferred partner in play activities or school tasks. Best friend was described as someone whom children were really looking forward to seeing in school or with whom they may share secrets. In six children with DLD, peer and best friend nominations overlapped but nine children with DLD listed different peers in their 'like to play with most/least' and best friend nominations.

Thirdly, ethical aspects of delivering both measures suggest that children's relations could be impacted. Accordingly, I initially had considered delivering only the positive peer nominations; however, as described in the 3.5.1 Sociometric analyses section, my data would not have captured 'neglected' and 'controversial' statuses. Furthermore, I explored previous studies as part of my ethical consideration before delivering the study. I learned that researchers (e.g. Iverson et al., 1997; Mayeux et al., 2007) investigated the ethical implications of sociometric assessment and report no changes in peer interactions and mostly no emotional responses in children following the assessment. Still, to eliminate any potential negative impact, I encouraged children not to share their answers and many children covered their answer sheets as they were writing their peers' names. Similarly, I did not get any negative reactions when I checked in with children after the assessment or when meeting them in one-to-one meetings. Teachers did not report any changes in the behaviours of peers of children with DLD. Although sociometric measures have their limitations, I aimed to use them as a part of my case study investigation and contribute to previous quantitative studies frequently using these tools (e.g. Andres-Roqueta et al., 2016; Brinton & Fujiki, 1999; Gertner et al., 1996). Since the results did not reveal tendencies of children with DLD to fall within a specific category (categories), this line of enquiry was not explored further. Instead, it gives background information reflecting a range of social statuses of the participating children with DLD as perceived by their classroom peers.

In the meetings with children with DLD, the child-centred approach posed challenges to the quantity and quality of data collected. Some participating children with DLD had a more

complex profile and so I aimed to accommodate their needs as opposed to pushing for following the prepared interviews schedule. For example, when CH6, who displayed autistic behaviours, started walking around the room and picked up crayons and paper during the retrospective interview, I did not ask them to sit down and continue with the interview schedule. Instead, I followed the child's lead for a moment and tried to gently bring them back to the meeting plan. Since this strategy did not work at that time, I invited the child to return to classroom and did not complete the data collection. Although there is missing data in this project as a result, the collected data set followed the best possible ways to ensure children's experiences are positive. Child-centred approach is crucial when involving children in research. To have the most positive impact on participating children's experiences, adjustments as well as flexibility should be considered when planning similar projects. Similar approaches pave the path of future research that puts children at the centre: implications for priorities, resources, and funding.

Involving carers and teachers could have helped clarify and obtain some of the missing data on the peer relationships and wellbeing of participating children with DLD, who also experienced emotional and behavioural difficulties. The objective of participatory approaches and the limited scope and resources of the project led to decisions of not following up with adults about children's experiences. Being consistent with prioritising children's participation in this project highlights the challenges that future researchers may consider when designing qualitative studies with children with DLD.

The limited number of participants does not allow for the generalisability of the findings across wider population of children with DLD. This limitation is a caveat of using case studies, but it does provide deep insights about aspects of peer relationships of children with DLD. Nevertheless, using multi-modal approaches to actively involving children with DLD and their friends in the research project was novel and analysing children's insights generated many avenues to explore.

8.5 Future research

The case studies of children with DLD and the involvement of their classroom friends laid grounds for further investigations in the areas of inclusion. One of the most surprising elements of the second part of the project was the lacking peer perceptions of language and communication difficulties in children with DLD. Neither friends nor children with DLD could see their language and communication as barriers to peer interactions. This however

does not mean that language and communication are not the cause of difficulties in peer relationships.

Future research could target the awareness of DLD in children and explore ways to introduce language and communication difficulties that some peers may experience. From the developmental perspective, it would be crucial to know the appropriate age that children can recognise that language involves not only the ability to speak and listen but also to express and comprehend more complex communication such as understanding non-literal meanings and is a key factor when it comes to building and maintaining peer relationships. Next, future work could employ child-friendly and strength-based approaches to present the individual needs of children with DLD to themselves and their peers. As similar efforts have already been done in autism research, building up on this literature to inform what could be done in DLD. Involving children in this research is a must and so participatory research methods will need to be deployed.

In future, scholars could build a more comprehensive picture about the self-identity of children with their DLD profile, which this project suggests is more important than social skills for developing strong peer relationships. Experimental studies could test this proposition and an ethnographic approach could reveal rich information about how children with DLD perceive themselves outside of school. Another option is including primary carers, educators, and SLTs to enhance our understanding of the self-identity of children with DLD. Identifying the supportive and hindering areas of positive self-identity (e.g. competence, self-worth, belonging) would allow for interventions promoting healthy development in children with DLD.

Relevant to social cognition assessment, future research could investigate re-designing the traditional tools to be more accessible to children with DLD and truly reflect children's development in understanding others. The inconsistent findings require enquiries to tackle more specific questions on the development of children's ToM concepts in line with their language abilities. Cognition assessments are too heavily reliant on language skills and so it is impossible to disentangle if children have cognitive difficulties or their performance is hindered by their language difficulties. Collaborating with experts in speech and language therapy would generate more meaningful findings.

Using complementary methods supported data collection and validation in this qualitative enquiry. Future qualitative studies would benefit from using multimodal approaches and

confirming preliminary findings with participants. Enhancing credibility and trustworthiness this way should become the standard in qualitative studies. Using one measure at one timepoint may not be enough to gain full understanding of the phenomenon and to capture all relevant issues that are important to participants, especially when involving children in the project.

In addition to methods, parents and teachers should be involved in the research process. The experience would be an opportunity for them to learn about the lives of children with DLD. Obtaining their perspective on the subject matter and being involved would make a much stronger impression on them to have a direct and positive impact to the lives of children with DLD. It was powerful for me to observe and listen to the children directly, and it could also be the case for parents and educators so much more than reading a report and children's quotes.

8.6 Reflections on the research project

It is important for me to reflect on my experiences of conducting this research project and present some ideas about what I could have done differently. First, I learned that children with DLD could be involved in the earlier stages of studies as consultants to help identify research questions and topics to explore. During my pilot study, when I collected limited and poor-quality data following the wellbeing self-reports, I initially considered interviews as supplementary to adult and peer reports. However, semi-structured interviews, art support and the child-centred approach demonstrated that even at the age of 6-8, children with DLD can reveal rich understandings of their social world. Many children answered both broadly and provided in-depth details. The minimally verbal children and those with additional behavioural and emotional difficulties might need a more visual and flexible approach. However, they too could have actively contributed to the planning stages and helped identify research topics with a more immediate impact on their daily lives.

My second lesson learned concerns identifying participants and my flexibility in involving children from different educational settings. I began the project with a plan to only include children with DLD from the mainstream classroom settings. However, the reality of identifying participants from this very specific group showed that it is not as straightforward for various reasons: ongoing discussions about DLD classifications, reluctance to sign up a child to a project outside of their curriculum, additional needs that a child with DLD experiences, etc. As a result of a low sign-up rate, I expanded the eligibility criteria to include

children who were receiving speech and language interventions, which led to recruiting children from the Specific Speech and Language Disorder (SSLD) Class.

In hindsight, this group enhanced the true representation of educational settings that children with DLD attend. The SSLD Class participants shared important perspectives of friendship, experiences, and social functioning insights. Nevertheless, their classroom settings implied very limited interactions with mainstream peers. Given the project aimed to learn how children with DLD can make more friends in mainstream settings, this change in the inclusion criteria affected the project design, particularly the analysis of mainstream peers' interviews that excluded the participants from the SSLD Class. All things considered; I would have still appreciated the opportunity to learn about children from the SSLD Class. Their experiences enriched this project and my knowledge of DLD within special education settings. However, if facing similar decision in future, I will consider changes to all aspects of the project's design including data analysis and interpretation.

My third lesson learned also relates to the insights from the sample, including the peers of children with DLD. Many times over the course of the project, I found myself amused with the children's wit, sharp answers, or comments that stayed with me and changed me as a person and a researcher. Some of them were about my visual aids "*How come you don't have an angry face?*" [CH8] or in the kindest way, made me stop and think [Me: How is it talking to your friend with DLD?] *"Just like anyone else"* [CH2F].

I would have liked to explore the kind truth, creativity, and playfulness in the participating children even more. In line with the researcher integrity, I stayed with the topic of peer relationships and social functioning of children. But having another option to work with children or even older participants with a specific background, I would leave a space for exploring their life lessons further or reporting on their humour and creativity.

To conclude, I started the project with no knowledge of language disorder and its impact on the lives of children. However, learning about DLD, its impact, and interacting which the affected children, I became a strong advocate for improving the school experiences of children with DLD. Through organising DLD awareness events, I learned about the perspectives of parents, therapists, and educators. I joined the RADLD campaign and became a DLD ambassador, a role that I continue pursuing beyond this project.

I was lucky to collect a lot of data and the hardest part was to decide what to report on. I stuck to the original idea of friendship, with wellbeing falling a little behind due to time restrictions.

Nevertheless, wellbeing is my main area of interest and I aim to revisit the data that I collected in a more systematic way. Enhancing my understanding of the wellbeing of children with DLD and developing methods supporting their participation will be my next areas of research.

8.7 Concluding comments

My research project explored the social world of 6- to 8-year-olds with DLD through aspects of their language and communication, emotional wellbeing, and behaviours. Additionally, it promoted participatory research methods and the use of visual support and art-based tools in studies involving children with DLD. My findings and the research experiences demonstrate that children with DLD and their peers can provide invaluable insights and should become more actively involved in the matters affecting their lives. Their specific perspectives of their world enhance our understanding of DLD, when some display of DLD difficulties may be more prevalent than others and newly identified contributors may be relevant to their peer relationships.

In particular, the self-concept development and self-identity of children with their DLD profile imply important avenues to explore in terms of children's social functioning as well as inclusive education. Many adults may assume that children are aware of their DLD difficulties, and that equally, their peers must be able to notice. However, as my project reveals, language and communication difficulties may not necessarily be obvious to children at the age of 6-8. Opportunities to disclose DLD to children and introduce them with how DLD difficulties may manifest and affect their peer interactions might help them understand why they may run into difficulties. Equally, sharing awareness especially with their classmates, could help improve the quality of their interactions and ultimately relationships. DLD is considered as a hidden disability and carers, SLTs, and educators need to ensure that DLD does not remain hidden even from the affected children and their classroom friends. Only when children understand their differences, they can support their individual needs and have truly inclusive relationships.

To have a real impact on the peer relationships of children with DLD, we need to continue conducting more studies in this field. My doctoral research project yielded important findings about within-child characteristics relevant to peer relationships but it still only scratches the surface. I have demonstrated that children with DLD and their peers can share important insights about their peer relationships' experiences and perceptions. Children can therefore

actively contribute to the existing knowledge of DLD and ongoing research efforts. It is time for the DLD community to actively listen to voice of children with DLD and design studies that make their development and daily experiences more meaningful and impactful.

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Winstanley, M., Webb, R. T., & Conti-Ramsden, G. (2020). Developmental language disorders and risk of recidivism among young offenders. *Journal of Child Psychology and Psychiatry, n/a*(n/a). https://doi.org/https://doi.org/10.1111/jcpp.13299

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Appendix A: Search terms used in systematised literature review

The systematised literature review (Chapter 4) involved reviewing articles identified using search terms listed in Table A.1. The qualitative PICo (Population – Interest – Context) Framework (Stern et al., 2014) was used.

Table A.1 PICo Search Terms

PICo framework	Boolean/Phrase
Population-age	(child* or kid* or pupil* or school* or preschool* or kindergarten* or primary*)
Population-limited language	AND ("Language impair*" or "Language disorder*" or "Language difficult*" or “Language problem*” or “impaired language” or “language deficit” or “language delay” or “developmental aphasia” or ”developmental dysphasia” or DLD or SLI or PLI or “developmental language disorder” or “specific language impairment”)
phenomenon of **I**nterest – peer relations	AND (Friend* or Peer* or classmate* or buddy* or playmate* or play* or Accept* or Reject* or exclude* or relat* or interact* or communicat* or cooperat* or collaborat* or connect or engage* or victim* or bully*)
Context-participatory research methods	AND (Self-report* or question* or survey* or interview* or observ* or sociometr* or nominat* or consult* or view* or perspective* participat* or voice* or facilitat* or gather* or collect* or elicit* or empower* or engag* or involv* or “creative method*” or art-based or visual or qualitative)

Appendix B: Studies excluded from the systematised literature review

The systematised literature review excluded the below listed studies (n = 39) due to reasons specific to exclusion criteria, e.g. population age was outside of the 4-12 years range targeted in the study. Chapter 4 contains the full list of inclusion and exclusion criteria.

Population age (n = 3)

Hosozawa, M., Tanaka, K., Shimizu, T., Nakano, T., & Kitazawa, S. (2012). How children with specific language impairment view social situations: An eye tracking study. *Pediatrics, 129*(6), e1453-e1460. doi:10.1542/peds.2011-2278

Stoneham, G. (2001). Friendship skills in children with specific language impairment. *International Journal of Language & Communication Disorders, 36 Suppl*, 276-281. doi:10.3109/13682820109177897

Vuksanovic, J. R. (2015). Relationship between social interaction bids and language in late talking children. *International Journal of Speech-Language Pathology, 17*(6), 527-536. doi:10.3109/17549507.2015.1010579

Population language (n = 7)

Driscoll, C., & Carter, M. (2018). The Effects of Variety of Activities on the Social Interaction of Preschool Children with Disabilities. *International Journal of Disability Development and Education, 65*(6), 599-613. doi:10.1080/1034912x.2018.1446072

Ladd, G. W. (2006). Peer Rejection, Aggressive or Withdrawn Behavior, and Psychological Maladjustment from Ages 5 to 12: An Examination of Four Predictive Models. *Child Development, 77*(4), 822. doi:10.1111/j.1467-8624.2006.00905.x

McLeod, S., Daniel, G., & Barr, J. (2013). 'When he's around his brothers … he's not so quiet': The private and public worlds of school-aged children with speech sound disorder. *Journal of Communication Disorders, 46*(1), 70-83. doi:10.1016/j.jcomdis.2012.08.006

Newbold, E. J., Howard, S., & Wells, B. (2011). Repair in the peer talk of 6-year-old boys. *Clin Linguist Phon, 25*(11-12), 1052-1058. doi:10.3109/02699206.2011.618903

Tempest, A., & Wells, B. (2012). Alliances and arguments: A case study of a child with persisting speech difficulties in peer play. *Child Language Teaching & Therapy, 28*(1), 57-72. doi:10.1177/0265659011419233

van der Wilt, F., van der Veen, C., van Kruistum, C., & van Oers, B. (2019). Language abilities and peer rejection in kindergarten: A mediation analysis. *Early Education and Development, 31*(2), 308-322. doi:10.1080/10409289.2019.1624145

Walsh, S., Horgan, J., May, R. J., Dymond, S., & Whelan, R. (2014). Facilitating relational framing in children and individuals with developmental delay using the relational

completion procedure. *Journal of the Experimental Analysis of Behavior, 101*(1), 51-60. doi:10.1002/jeab.66

Interest (n = 7)

Brinton, B., Spackman, M. P., Fujiki, M., & Ricks, J. (2007). What should chris say? The ability of children with specific language impairment to recognize the need to dissemble emotions in social situations. *Journal of Speech, Language, and Hearing Research, 50*(3), 798-811. doi:10.1044/1092-4388(2007/055)

Cunningham, B. J., Hanna, S. E., Oddson, B., Thomas-Stonell, N., & Rosenbaum, P. (2017). A population-based study of communicative participation in preschool children with speech-language impairments. *Dev Med Child Neurol, 59*(10), 1049-1055. doi:10.1111/dmcn.13515

Haley, K. L., Camarata, S. M., & Nelson, K. E. (1994). Social valence in children with specific language impairment during imitation-based and conversation-based language intervention. *Journal of Speech & Hearing Research, 37*(2), 378-388. doi:10.1044/jshr.3702.378

Maggio, V., Grañana, N. E., Richaudeau, A., Torres, S., Giannotti, A., & Suburo, A. M. (2014). Behavior problems in children with specific language impairment. *Journal of Child Neurology, 29*(2), 194-202. doi:10.1177/0883073813509886

Samson, A. C., van den Bedem, N. P., Dukes, D., & Rieffe, C. (2020). Positive Aspects of Emotional Competence in Preventing Internalizing Symptoms in Children with and without Developmental Language Disorder: A Longitudinal Approach. *Journal of Autism and Developmental Disorders, 50*(4), 1159-1171. doi:10.1007/s10803-019-04336-y

Spackman, M. P., Fujiki, M., & Brinton, B. (2006). Understanding emotions in context: The effects of language impairment on children's ability to infer emotional reactions. *International Journal of Language & Communication Disorders, 41*(2), 173-188. doi:10.1080/13682820500224091

Sylvestre, A., Brisson, J., Lepage, C., Nadeau, L., & Deaudelin, I. (2016). Social participation of children age 8-12 with SLI. *Disabil Rehabil, 38*(12), 1146-1156. doi:10.3109/09638288.2015.1074730

Context (n = 18)

Aro, T., Eklund, K., Nurmi, J. E., & Poikkeus, A. M. (2012). Early language and behavioral regulation skills as predictors of social outcomes. *Journal of Speech, Language, and Hearing Research, 55*(2), 395-408. doi:10.1044/1092-4388(2011/10-0245)

Botting, N., & Conti-Ramsden, G. (2000). Social and behavioural difficulties in children with language impairment. *Child Language Teaching and Therapy, 16*(2), 105-120. doi:10.1177/026565900001600201

Conti-Ramsden, G., Mok, P., Durkin, K., Pickles, A., Toseeb, U., & Botting, N. (2019). Do emotional difficulties and peer problems occur together from childhood to

adolescence? The case of children with a history of developmental language disorder (DLD). *European Child & Adolescent Psychiatry, 28*(7), 993-1004. doi:10.1007/s00787-018-1261-6

Danger, S., & Landreth, G. (2005). Child-Centered Group Play Therapy with Children with Speech Difficulties. *International Journal of Play Therapy, 14*(1), 81-102. doi:10.1037/h0088897

Eadie, P., Conway, L., Hallenstein, B., Mensah, F., McKean, C., & Reilly, S. (2018). Quality of life in children with developmental language disorder. *International Journal of Language & Communication Disorders, 53*(4), 799-810. doi:10.1111/1460-6984.12385

Forrest, C. L., Gibson, J. L., Halligan, S. L., & St Clair, M. C. (2020). A cross-lagged analysis of emotion regulation, peer problems, and emotional problems in children with and without early language difficulties: Evidence from the millennium cohort study. *Journal of Speech, Language, and Hearing Research, 63*(4), 1227-1239. doi:10.1044/2020_JSLHR-19-00188

Fujiki, M., Brinton, B., Hart, C. H., Olsen, J., & Coombs, M. (2019). Using measurement invariance to study social withdrawal in children with developmental language disorders. *Language, Speech, and Hearing Services in Schools, 50*(2), 253-266. doi:10.1044/2018_LSHSS-18-0071

Fujiki, M., Brinton, B., Morgan, M., & Hart, C. H. (1999b). Withdrawn and sociable behavior of children with language impairment. *Language, Speech & Hearing Services in Schools, 30*(2), 183. Retrieved from https://ezp.lib.cam.ac.uk/login?url=https://search.proquest.com/docview/232585481?accountid=9851

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Hart, K. I., Fujiki, M., Brinton, B., & Hart, C. H. (2004). The relationship between social behavior and severity of language impairment. *Journal of Speech, Language, and Hearing Research, 47*(3), 647-662. doi:10.1044/1092-4388(2004/050)

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Oliver, B. R., Barker, E. D., Mandy, W. P. L., Skuse, D. H., & Maughan, B. (2011). Social Cognition and Conduct Problems: A Developmental Approach. *Journal of the American Academy of Child and Adolescent Psychiatry, 50*(4), 385-394. doi:10.1016/j.jaac.2011.01.006

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Theoretical (n = 4)

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Appendix C: Studies included in the systematised literature review

Table C.1 Interview studies

Author (s)	Year	Title	Journal	Study details	Interviews	Other measures
Lyons, R. & Roulstone, S.	2017	Well-being and resilience in children with speech and language disorders	*Journal of Speech, Language and Hearing Research*	Narrative enquiry, Qualitative design 9-12 y/o 11cwDLD (10 special speech and language classes, 1 mainstream) UK	Multiple semi-structured interviews, over a 6 month period 59 interviews in total at home and in school 45-1hr long, Personal photographs & prompts Flexible interview guide: open-ended questions about events, happenings, and relationships in different contexts such as home, school, and leisure context	Wellbeing as the key topic Protective & risk factors to wellbeing Researcher/interviewer – SLT background
Markham, C., Van Laar, D., Gibbard, D., & Dean, T.	2009	Children with speech, language and communication needs: their perceptions of their quality of life	*International Journal of Language & Communication Disorders*	Focus groups 6-18 y/o (13x children 6-12y/o) 29 participants Mainstream, Language Units, Special schools	7x focus group interviews, non-directive, minimum use of prompts 35-45 min Primary school-aged, up to 1hr with older participants Children put together in FGs based on their Key Stage groups, similar ages together Picture-card game, variable use, age specific	Quality of life as the key theme Complements the qualitative work on the perceptions parents and carers have on the quality of life of children with communication difficulties Researcher/interviewer – SLT background
Merrick, R., & Roulstone, S.	2011	Children's views of communication and speech-language pathology.	*International Journal of Speech-Language Pathology*	Exploratory design, Open-ended interviews 7-11 y/o, in receipt of SLT 11 cwDLD Mainstream, England	1-4 interviews per child were conducted at home or in school 25-50 minutes long Nonverbal activities: drawing, taking photographs, and compiling a scrapbook	Perceptions of own language and speech impairment as the main theme Researcher/interviewer – SLT background

Roulstone, S., & Lindsay, G.	2012	The perspectives of children and young people who have speech, language and communication needs, and their parents	*Department for Education*	Workshops with children 8-16 y/o	Merges 2 technical reports on (1) The Preferred Outcomes of Children with Speech, Language and Communication Needs and Their Parents & (2) Profiles of need and provision for children with language impairments and autism	Quality of life as the key theme KIDSCREEN self-report Complemented with parents' perspectives Part of series of reports on the Better Communication Research Programme

Table C.2 Sociometric studies

Author (s)	Year	Title	Journal	Study details	Sociometric tools	Other measures
Andrés-Roqueta, C., Adrian, J. E., Clemente, R. A., & Villanueva, L.	2016	Social cognition makes an independent contribution to peer relations in children with Specific Language Impairment.	*Research in Developmental Disabilities*	Comparative study 3-8 y/o 70 (35 cwDLD, 35 peers) Mainstream settings Spain	Positive & negative peer nominations (Coie & Dodge, 1983) Top 3, using pictures of classmates	CCC-2 (autistic behaviour only) Language battery: Comprehension, vocabulary, pragmatics, language composite, short-term auditory memory tests Nonverbal IQ via CPM Social cognition: Unexpected contents, change of location, strange stories
Brinton, B., & Fujiki, M.	1999	Social Interactional Behaviors of Children with Specific Language Impairment.	*Topics in Language Disorders*	Case studies 6 children with DLD 8-12 y/o Mainstream settings UK	Informal picture task – 10 pictures, no set number of nominees (Who do you perform the activity with?) developed by Fujiki et al., 1996 Friendship Quality via the Loneliness Questionnaire (Williams & Asher, 1992)	Observations: triadic interactions of 1x child with DLD & 2x TD peers. (Same age, gender, and school, but not familiar with each other). Children with DLD were asked to enter the ongoing play of 2 peers and observed in unstructured play and subsequent tasks: toy selection, negotiation, cooperative work. CELF-R Teachers: - Social skills via SSRS-T (Gresham & Elliott, 1990) - Academic performance (overall, math, reading)
Fujiki, M., Brinton, B., Hart, C. H., & Fitzgerald, A. H.	1999	Peer Acceptance and Friendship in Children with Specific Language Impairment.	*Topics in Language Disorders*	Case studies 6 children with DLD 6-10 y/o Mainstream settings UK	Peer rating of every classmate (Asher et al. 1979; Asher & Dodge, 1986) Pictures of happy, neutral, and sad face used with 1st & 2nd graders, names read from the list. Reciprocal friendships – top 3 best friends	Data from child's records: Expressive & receptive language IQ (Stanford Binet Intelligence Scale)
Fujiki, M., Brinton, B., McCleave, C. P.,	2013	A social communication intervention to increase validating	*Lang Speech Hear Serv Sch*	Case studies Intervention 4 children with DLD	Peer acceptance (C. H. Hart, Ladd, & Burleson, 1990) rate how much like to play with each	Observation: Validation comments during a cooperative learning task Data from child's records:

Anderson, V. W., & Chamberlain, J. P.		comments by children with language impairment.		6-9 y/o Mainstream settings, UKK	classmate, same gender Reciprocal friendship – name three best friends (Parker & Asher, 1993)	Expressive language IQ Social skills via Teacher behaviour Rating Scale
Fujiki, M., Brinton, B., & Todd, C. M.	1996	Social skills of children with specific language impairment.	*Language Speech and Hearing Services in Schools*	Comparative study 19 children with DLD & 19 aged-matched peers 8-12 y/o UK	Informal picture task – 10 pictures, no set number of nominees (Who do you perform the activity with?) developed by Fujiki et al., 1996 Friendship Quality via the Loneliness Questionnaire (Williams & Asher, 1992)	Social skills via Teacher behaviour Rating Scale SSRS-T (Gresham & Elliott, 1990) Children referred by an SLT – records of performance IQ (Wechsler scales, Matrix Analygies Test), language (CELF-R)
Gertner, B. L., Rice, M. L., & Hadley, P. A.	1994	Influence of communicative competence on peer preferences in a preschool classroom	*J Speech Hear Res*	Comparative study 31 children (12x cwDLD, 10x ESL*, 9x TD) 4-6 y/o Language Acquisition Preschool, Kansas, USA	Positive and negative peer nominations. Orientation activity - pictures of food. Top 3, using pictures of classmates – removed after being nominated (cannot be positively & negatively nominated) Hazen and Black's (1989) four sociometric status groups (i.e., Liked, Low Impact, Disliked, Mixed). Reciprocal friendships	Children's records: IQ (Kaufman Assessment Battery for children); Language battery (PPVT-r; Reynell Developmental Language Scales-Revised, the Goldman-Fristoe Test of Articulation, and a spontaneous language sample used to obtain a mean length of utterance (MLU)
Guralnick, M. J., Connor, R. T., Hammond, M. A., Gottman, J. M., & Kinnish, K.	1996	The peer relations of preschool children with communication disorders.	*Child Development*	12 playgroups: 6 mainstream & 6 specialised (3 only TD children, 3 only children with communication disorder) Each group spend together 2.5 hours per day, 5x a week for 2 weeks (10 session in total) 4 – 5 y/o USA	Peer ratings after each play group session; placing Polaroid photographs of children in play group in boxes with happy, neutral or sad face. Scoring 3,2,1 respectively, following the procedure of Asher, Singleton, Tinsley & Hymel (1979) Prior training using food to ensure ratings are understood	Observations – Social participation & cognitive play (Parten, 1932) in play groups; e, the Individual Social Behavior Scale Parent questionnaires – CBCL; Vineland Adaptive Behaviour Scales; Hollingshead Social Status Index Administered IQ (Wechsler Scale) Language Comprehension (TACL-R) and expressive (Preschool Language Scale) Obtained Full Scale IQ, Performance IQ, Verbal IQ

Laws, G., Bates, G., Feuerstein, M., Mason-Apps, E., & White, C.	2012	Peer acceptance of children with language and communication impairments in a mainstream primary school: Associations with type of language difficulty, problem behaviours and a change in placement organization.	*Child Language Teaching and Therapy*	Comparative study Longitudinal Year 3 & Year 7 249 children (18x from LRB, 231 peers) 7-11 y/o Language Resource Base Bristol, UK	LITOP (Frederickson & Furnham, 1998) Same gender only Researcher reading out the names, children pointing at 4 disks (smiling, frowning, neutral face and question mark) Mutual friendships	Teachers: Language CCC-2 for LRB children only Behaviour TRSR
McCabe, P. C., & Meller, P. J.	2004	The relationship between language and social competence: How language impairment affects social growth.	*Psychology in the Schools*	Comparative study 71 children (36 cwDLD, 35 peers) 3:10-5:7y/o New York, US	Only within-subject sociometric nominations (DLD children rated only DLD peers, TD children only TD peers) Sociometric rating: pictures of classmates into three boxes (smiling, neutral and unhappy face) Mutual friendships – chose a picture of friends (no limit), assigned to a many, one, or no friends group (Howes, 1987)	Language assessed via CPSE (cwDLD) and TELD-2 (TD peers) Social skills: parents & teachers (SSRS), Howe's Teacher Ratings of Children's behaviour Child assessment: Emotional expression identification; Emotional situation knowledge
Schneider, N. J. B.	2009	The relation between language and sociometric status in school-aged children.	*ProQuest Information & Learning*	Comparative study 3 groups (pre-schoolers, 3rd graders, 5th graders) 5 – 14 y/o Florida, US	Peer nominations – name best friends, not ok friends, remaining names to the 'OK friend' category. No limited number. 8th graders with 2 more categories (really good friend, I don't know) Peer ranking within each previously nominated category (not for 8th grade), complemented w/ interview comments for top three & bottom three rankings Names of classmates printed on a separate paper, photo included	Child assessment: language PPVT-IV, CELF-4,

*ESL – English as a secondary language

Table C.3 Self-report studies

Author (s)	Year	Title	Journal	Study details	Self-assessment tools	Other tasks & measures
Arkkila, E., Räsänen, P., Roine, R. P., Sintonen, H., Saar, V., & Vilkman, E.	2011	Health-related quality of life of children with specific language impairment aged 8-11.	*Folia Phoniatrica et Logopaedica*	8-11 y/o 51 cwDLD 244 TD peers Greater Helsinki area, Finland	Health-related quality of life (HRQoL, 17D) School & rehabilitation questionnaire	Language: existing records Nonverbal IQ: existing records Background questionnaire: type of school, additional special education/ support, speech and language therapy, and other rehabilitation.
Conti-Ramsden, G., & Botting, N.	2004	Social Difficulties and Victimization in Children With SLI at 11 Years of Age.	*Journal of Speech, Language & Hearing Research*	Longitudinal 7 & 11 y/o 242 cwDLD (varies) Language units, Mainstream, Special schools, England	SDQ self-report My Life in School	Behaviour: teachers Rutter Behavioral Questionnaire, Harter Perceived competence Scale (subscale peer competence only), SDQ Language: Teachers CCC, EVT, BPVS, PTT, and TROG; Literacy: WORD Nonverbal IQ: WISC
Gough Kenyon, S. M., Lucas, R. M., & Palikara, O.	2020	Expectations of the transition to secondary school in children with developmental language disorder and low language ability.	*British Journal of Educational Psychology*	Comparative study 10-11 y/o 107 children: 30 cwDLD, 29 Low Language, 48 TD peers 8x mainstream primary schools, south-east of England	School Concerns Questionnaire KIDSCREEN-27 Emotion regulation questionnaire Self-perception profile of children	Language: CELF-4; TROG Nonverbal IQ: WISC-II Soc cognition: Emotion recognition task using E-Prime 2.0
Jerome, A. C., Fujiki, M., Brinton, B., & James, S. L..	2002	Self-esteem in children with specific language impairment.	*Journal of Speech, Language, and Hearing Research*	6-9 y/o (46 children, 23 cwDLD) & 10-13 y/o (34 children, 17cwDLD)	Self-perception profile of children (10-13 y/o) Pictorial scale of perceived competence & social acceptance for young children (6-9 y/o)	Language: CELF_R, diagnosis by the school speech-language pathologist Nonverbal IQ: WISC-III

Lindsay, G., Dockrell, J. E., & Mackie, C.	2008	Vulnerability to bullying in children with a history of specific speech and language difficulties.	*European Journal of Special Needs Education*	12 y/o 67 cwDLD (tested when 8 y/o), 32 learning difficulties (SEN), 42 TD peers Mainstream, Special schools North of England, UK	Life in School (+ new measure Verbal Bullying Index) Self-perception profile of children Simplified & Anglicised language, colour coded scale, italics to distinguish positive-negative statements, statements read out loud	Language: BPVS II, TROG, Bus story, Neale analysis of reading ability – Revised, CELF, CCC-2 Non-verba IQ: British ability scale II matrices Parents: SDQ Teachers: SDQ
Marton, M., Abramoff, B., & Rosenzweig, S.	2005	Social cognition and language in children with specific language impairment (SLI).	*Journal of Communicatio n Disorders*	Comparative 7-10 y/o 19 cwDLD, 19 aged matched peers Mainstream, US (?)	Peer negotiation & conflict resolution Culture free self-esteem inventory Pictures illustrating context	Language: CELF-R Nonverbal IQ: WISC-R Social competence & behaviours: parent & teacher questionnaire (social relations, linguistic knowledge, conversational skills, nonverbal communication, adaptive behaviour incl. conflict resolution)
McCormack, J., Harrison, L. J., McLeod, S., & McAllister, L.	2011	A nationally representative study of the association between communication impairment at 4-5 years and children's life activities at 7-9 years.	*Journal of Speech, Language, and Hearing Research*	Longitudinal 7-9 y/o 4,329 sample from the Longitudinal Study of Australian Children [1,041 cwDLD tested when 4-5 y/o; 3,288 TD peers]. Australia	Marsh Self-Description Questionnaire-III Bullying scale (Perception of Peer Support tool) School Sentiment Inventory Self-reports read out loud	Language: PPVT – III Behaviour: SDQ (parents & teachers) Learning (Teachers): Academic rating, Approach to learning scale, School progress, Student-teacher relationship scale Temperament: School-aged Inventory of Temperament (parents)
Nicola, K., & Watter, P.	2015	Health-related quality of life from the perspective of children with severe specific language impairment.	*Health Qual Life Outcomes*	5-16 y/o 43 cwDLD Special school Queensland, Australia	Pediatric Quality of Life Inventory (PedQL) Child assent, Pictorial scales, researchers assisted with questionnaire, parents sign language	Parents: parent proxy report on PedQL
Nicola, K., & Watter, P.	2018	The comparison of perceived health-	*BioMed Central*	Comparative 5-16 y/o	Pediatric Quality of Life Inventory (PedQL)	Parents: parent proxy report on PedQL

		related quality of life between Australian children with severe specific language impairment to age and gender-matched peers.	*Pediatrics*	43 cwDLD & 43 TD peers Special school Queensland, Australia	Child assent, Pictorial scales, researchers assisted with questionnaire, parents sign language	
Redmond, S. M.	2011	Peer Victimization Among Students With Specific Language Impairment, Attention-Deficit/Hyperactivity Disorder, and Typical Development.	*Language Speech and Hearing Services in Schools*	Comparative 7-8 y/o 60 children (DLD, TD, ADHD)	Feelings About School Survey My Life in School – Children	Language: Test of Early Grammatical Impairment; CELF-4 Nonverbal IQ: Naglieri Nonverbal Ability Test—Individual Behaviour: Child Behavior Checklist DSM–ADHD subscale; Conners' Parent Rating Scale Friends: 2x items from CBCL (parents)
Van den Bedem, N.P., Dockrell, J.E., van Alphen, P.M., Kalicharan, S.V. & Rieffe, C.	2018	Victimization, Bullying, and Emotional Competence: Longitudinal Associations in (Pre)Adolescents With and Without DLD	*Journal of Speech, Language, and Hearing Research*	Longitudinal 8-16 y/o 326 children: 112 cwDLD, 214 TD peers Mainstream, Special schools Netherlands	Bully/Victim Inventory – Dutch version, revised Emotion Awareness Questionnaire for Children Mood questionnaire Statements read out loud to children with DLD	Language: CELF-4; CCC-2 (parents, Dutch version) Nonverbal IQ: WISC-III (Block design & Picture Arrangement) Neighbourhood SES: education, income and occupation of all adults in the neighbourhood
Van den Bedem, N.P., Willem, D., Dockrell, J.E., van Alphen, P.M., & Rieffe, C	2019	Interrelation between empathy and friendship development during (pre)adolescence and the moderating effect of developmental language disorder: A longitudinal study	*Social Development*	Longitudinal 8-16 y/o 325 children: 114 cwDLD, 211 TD peers Mainstream, Special schools Netherlands	Best Friend Index (BFI; friendship quality) Empathy Questionnaire for Children and Adolescents (affective, cognitive, prosocial motivation)	Language: CELF-4; CCC-2 (parents, Dutch version) Nonverbal IQ: WISC (Block design & Picture Arrangement)

Table C.4 Task-based studies

Author (s)	Year	Title	Journal	Study details	Psychosocial tasks	Other measures
Bakopoulou, I., & Dockrell, J. E.	2016	The role of social cognition and prosocial behaviour in relation to the socio-emotional functioning of primary aged children with specific language impairment.	*Research in Developmental Disabilities*	Comparative study 6-11 y/o 3x groups: 42 cwDLD, 42 age-matched peers, 42 nonverbal cognitive ability matched peers Mainstream classrooms or Language unit, UK	Social cognition battery: emotion identification, emotion labelling, inferring the causes of emotions, and knowledge of conflict resolution strategies Photographs, pictures of faces with emotions, computer supported, child-role play stories Language: CELF-R Nonverbal IQ: Raven's CPM	Teachers: Socio-emotional functioning via SDQ SDQ split into Total Difficulties and Prosocial Behaviour scores
Farmer, M.	2000	Language and social cognition in children with specific language impairment.	*Journal of Child Psychology and Psychiatry and Allied Disciplines*	Comparative study 10-11 y/o 4 groups: 8 cwDLD in special schools, 8 cwDLD in language units, 8 age-matched peers, 8 language-age matched peers Special school, Language unit, or Mainstream classrooms	Social cognition: first-order and second-order Theory of Mind, motivation behind actions and speech via Strange stories Language: British Picture Vocabulary Scale, CELF-R Sentence Recall subtest, Non-word repetition test Nonverbal IQ: WISC(III)-R (Wechsler, 1992) or British Ability Scales	Teachers: Social behaviour via SDQ SDQ split into Total Difficulties and Prosocial Behaviour scores
Meline, T. J., & Brackin, S. R.	1987	Language-impaired children's awareness of inadequate messages.	*Journal of Speech and Hearing Disorders*	Comparative study 6-8 y/o 3 groups: 15 cwDLD, 15 age-matched peers, 15 language-matched peers	Metalinguistic/metacommunicative problem-solving: Judgment of a nonspecific request made in a story, either speaker-blamers or listener-blamers 2 stories, coloured drawings Language: TACL--R Nonverbal IQ: Columbia Mental Maturity Scale	

Timler, G. R.	2008	Social knowledge in children with language impairments: Examination of strategies, predicted consequences, and goals in peer conflict situations.	*Clinical Linguistics and Phonetics*	Comparative study 8-12 y/o 2 groups: 12 cwDLD, 12 age-matched peers	Peer conflict task, 12 vignettes, 2 conditions: open-ended and forced choice Animated PowerPoint presentation Language: CELF-4 Nonverbal IQ: Test of Nonverbal Intelligence	Parents: Social Skills Rating System (SSRS) split into Social Skills & Problem Behaviour Teachers: SSRS-T; TOPS (Taxonomy of Problematic Social Situations for Children)

Table C.5 Observation studies 1 – Classroom and playroom observations

Author (s)	Year	Title	Journal	Study details	Observation focus	Other tasks & measures
Beilinson, J. S., & Olswang, L. B.	2003	Facilitating peer-group entry in kindergartners with impairments in social communicatio n.	*Language, Speech, and Hearing Services in Schools*	Case study series 3 cwDLD & 3 TD peers; 5-6 y/o Washington Peer group entry / triads	Intervention evaluation 4 week treatment – used of prompts *Behaviours*: Peer group entry behaviours; High-risk behaviours; Play behaviours During 45 min free play period Use of props & verbal statement to enter peer groups increased Cooperative play increased, not to the same levels as TD peers but comparable level	*Language*: PPVT-III, TOLD-O
Fujiki, M., Brinton, B., Isaacson, T., & Summers, C.	2001	Social behaviors of children with language impairment on the playground: A pilot study.	*Language, Speech, and Hearing Services in Schools*	Comparative study 8 cwDLD & 8 TD age-matched peers, 6-10y/o	Naturalistic observation of playground during recess Coding based on Hart, DeWolf, Wozniak, and Burts (1992) Video & audio recorded interactions, 1-hr long clip per child, over 4x days Children wearing light-weight microphones, similar to beads on a neckless	*Language*: Test of Language Development–2 (TOLD-2), CELF-R *Nonverbal reasoning*: Leiter International Performance Scale, Wechsler-II, Stanford Binet Intelligence Scale–4th edition
Guralnick, M. J., Gottman, J. M., & Hammond, M. A.	1996	Effects of social setting on the friendship formation of young children differing in developmental status.	*Journal of Applied Developme ntal Psycholog y*	21 playgroups, n = 6 children in each group: 12 mainstream groups (4 TD, small number of either 2 cwDLD or 2 children with developmental cognitive delays) & 9 specialised groups (only children with similar developmental profile) Unacquainted groups of children spend together 2.5 hours per day, 5x a week for 2 weeks (10 session in total) 4 – 5 y/o, United States	Free play in a playroom with housekeeping, blocks, puzzles, games, and precast, manipulative toy play activities, individual reading options Teacher & teaching assistant Observation coding – Social participation & cognitive play (Parten, 1932) in play groups; the Individual Social Behaviour Scale; Peer Observation Scale 3 video recordings per week over 2 weeks, 6x video recordings per child Friendships established – total of positive	*Behaviour & adjustment:* Parent questionnaires – CBCL; Vineland Adaptive Behaviour Scales; Hollingshead Social Status Index Administered IQ (Wechsler Scale) *Language*: Comprehension (TACL-R) and expressive (Preschool Language Scale)

					behaviours (summed) distributed in relation to 5 companions in playgroup, proportion of interactions calculated. Unilateral friend = min 33% of positive interactions. Reciprocal friend = meeting min 33% criterion from the same child in the group. Duration of play – 10s intervals of group and parallel play (from Peer Observation Scale) calculated similarly to positive interactions resulted in similar unilateral and reciprocal friendships.	*Nonverbal abilities*: Obtained Full Scale IQ, Performance IQ, Verbal IQ
Guralnick, M. J., Hammond, M. A., & Connor, R. T.	2006	Nonsocial play patterns of young children with communicatio n disorders: Implications for behavioral adaptation.	*Early Education and Developme nt*	Group comparisons 30 cwDLD, 42 TD peers 4-5 y/o 12 playgroups: 6 mainstream & 6 specialised (3 only TD children, 3 only cwDLD) Each group spend together 2.5 hours per day, 5x a week for 2 weeks (10 session in total) United States	Free play in a playroom with housekeeping, blocks, puzzles, games, and precast, manipulative toy play activities, individual reading options Teacher & teaching assistant 180 min of video recording per child, within 2 weeks: 6 consecutive 10 mins clips per child on different occasions Observation coding: Social participation & cognitive play (Parten, 1932); Play Observation Scale; Individual Social Behaviour Scale; Peer interaction composites	*Behaviour & adjustment:* Parent questionnaires – CBCL; Vineland Adaptive Behaviour Scales; Hollingshead Social Status Index Administered IQ (Wechsler Scale) *Language*: Comprehension (TACL-R) and expressive (Preschool Language Scale) *Nonverbal abilities*: Obtained Full Scale IQ, Performance IQ, Verbal IQ
Hadley, P. A., & Rice, M. L.	1991	Conversationa l responsiveness of speech- and language-impaired pre-schoolers	*Journal of Speech and Hearing Research*	Group comparison 18 children in total, 3-5 y/o 4 cwDLD, 4 with speech impairment, 4 with history of DLD, 6x TD 2 classes of 13 each with a teacher, a teacher assistant, two SLT trainees Language Acquisition Preschool, USA	Naturalistic classroom observations in 40-min play time: art, drama, quiet area (book & puzzle), block area (blocks & trucks) 4-min observation 6 times, total of 24 min per each child Coding: partner, type of play, interaction attempts, response type, interaction ending	*Language*: Reynell Developmental Language Scale; Peabody Picture Vocabulary Test-Revised, Mean length of utterance (MLU); Goldman-Fristoe Articulation *Nonverbal intelligence*: Kaufman Assessment Battery (K-ABC)

Henton, J.	1998	Talking about talking—A study of children in a language class.	*Child Language Teaching and Therapy*	7 children, 5-7 y/o Language class Class teacher & SLT	Naturalistic free play observation Coding: speech acts and conversational features (Locke & Beech, 1991)	None - children rolled in language class
Horowitz, L., Jansson, L., Ljungberg, T., & Hedenbro, M.	2005	Behavioural patterns of conflict resolution strategies in preschool boys with language impairment in comparison with boys with typical language development.	*International Journal of Language and Communication Disorders*	11 boys wDLD, 4-7 y/o; 20 TD boys, 4-6 y/o Language preschool (DLD) & Mainstream (TD) Sweden	Naturalistic observations Free play in playrooms with opportunities for rough-and-tumble play with ropes, ladders, rings, mattresses, etc. and/or they contained various toys such as doll carriages, puzzles, books, toy cars, etc Video recordings Coding: Identify conflict per Shantz' (1987) mutual opposition criteria, victim & aggressor who continues with behaviour after opposed by the victim Behaviours: Conflict analysis: pre-conflict interaction, conflict period, post-conflict Conflict period, Post-conflict conflict (6x reconciliation behaviours), Verbal character of accepted behaviours	*Language*: Peabody Picture Vocabulary Test-Revised, Reynell Developmental Language Scale; TROG, SIT *Nonverbal abilities*: Leiter International Performance Scale; Griffith Mental Development Scales
Horowitz, L., Jansson, L., Ljungberg, T., & Hedenbro, M.	2006	Interaction before conflict and conflict resolution in pre-school boys with language impairment.	*International Journal of Language and Communication Disorders*	11 boys wDLD, 4-7 y/o; 20 TD boys, 4-6 y/o Language preschool (DLD) & Mainstream (TD) Sweden	Conflict (pre & post) interaction – free play, specialised & mainstream preschools, naturalistic observations Naturalistic observations Free play in playrooms with opportunities for rough-and-tumble play with ropes, ladders, rings, mattresses, etc. and/or they contained various toys such as doll carriages, puzzles, books, toy cars, etc	*Language*: Peabody Picture Vocabulary Test-Revised, Reynell Developmental Language Scale; TROG, SIT *Nonverbal abilities*: Leiter International Performance Scale; Griffith Mental Development Scales
Horowitz, L., Westlund,	2008	Post-conflict non-affiliative behavioural	*Behaviour*	11 boys wDLD, 4-7 y/o; 20 TD boys, 4-6 y/o	Conflict reconciliation – free play, specialised & mainstream preschools, naturalistic observations	*Language*: Peabody Picture Vocabulary Test-Revised, Reynell

K., & Ljungberg, T.		strategies and subsequent social interaction in preschool boys with language impairment in comparison to preschool boys with typical language skills.		Language preschool (DLD) & Mainstream (TD) Sweden		Developmental Language Scale; TROG, SIT *Nonverbal abilities*: Leiter International Performance Scale; Griffith Mental Development Scales
McCabe, P. C., & Marshall, D. J.	2006	Measuring the Social Competence of Preschool Children With Specific Language Impairment: Correspondence Among Informant Ratings & Behavioral Observations	*Topics in Early Childhood Special Education*	Social behaviours vs parent & teacher reports 30 cwDLD, 18 TD peers, 2 SLTs, 1 TA 3 integrated classrooms, New York	Naturalistic free play classroom observation for 5-min om 20-min play time Social interactive coding system - SICS videotaped communicative interactions	*Behaviour, Competencies and Social-emotional Adjustment*: Parents: Parent-Child Rating Scale (P-CRS) Teachers: Teacher–Child Rating Scale (T-CRS); Social Competence Behaviour Evaluation
Rice, M. L., Sell, M. A., & Hadley, P. A.	1991	Social interactions of speech- and language-impaired children.	*Journal of Speech and Hearing Research*	Group comparison 6 cwDLD, 3 Speech impairment, 8 EAL, 9 TD peers 2 classes of 13 each with a teacher, a teacher assistant, two SLT trainees Language Acquisition Preschool in Kansas	Naturalistic classroom observations in 40-min play time: art, drama, quiet area (book & puzzle), block area (blocks & trucks) Social interactive coding system - SICS videotaped communicative interactions	*Language*: Reynell Developmental Language Scale; Peabody Picture Vocabulary Test-Revised, Mean length of utterance (MLU); Goldman-Fristoe Test of Articulation *Nonverbal intelligence*: Kaufman Assessment Battery

						for Children (K-ABC)
Schuele, C. M., Rice, M. L., & Wilcox, K. A.	1995	Redirects: a strategy to increase peer initiations.	*Journal of Speech and Hearing Research*	Intervention – teacher redirects, 9 weeks 4 chwDLD, 3-5 y/o 2 classrooms of 16 Language Acquisition Preschool in Kansas	Naturalistic classroom observation in 40-min play time: art, drama, quiet area (book & puzzle), block area (blocks & trucks) Social interaction SICS Each classroom with a teacher, a teacher assistant, two SLT trainees Children with DLD, EAL, TD peers in a classroom	*Language*: Reynell Developmental Language Scale; Peabody Picture Vocabulary Test-Revised, Mean length of utterance (MLU); Goldman-Fristoe Test of Articulation *Intervention implementation*: Redirect Coding System (RCS)

Table C.6 Observation studies 2 – Dyadic and triadic interactions

Author (s)	Year	Title	Journal	Study details	Observation focus	Other tasks & measures
Brinton, B., Fujiki, M., & Higbee, L. M.	1998	Participation in cooperative learning activities by children with specific language impairment.	*Journal of Speech, Language, and Hearing Research*	6 cwDLD, 6 language-matched, 6 age-matched peers & 36 TD peers 8-12 y/o cwDLD 5-12 y/o peers 18 triads of children from above sample groups mixed with gender & age matched peers	Cooperative group task / learning Triads *Behaviour*: Verbal & nonverbal collaboration Verbal & nonverbal noncollaboration	*Language*: CELF-R *Nonverbal reasoning*: TONI, WISC-R, WISC-III
Brinton, B., Fujiki, M., Montague, E. C., & Hanton, J. L.	2000	Children with language impairment in cooperative work groups: A pilot study.	*Language, Speech, and Hearing Services in Schools*	6cwDLD & 12 familiar TD peers 6-7 y/o 6 triads	Cooperative group task – materials manager, checker, leader *Behaviour*: Collaboration scans: good, fair, poor	*Language*: CELF-R, TOLD *Nonverbal reasoning*: Leiter International Performance Scale, Stanford-Binet Intelligence Scale - 4th Ed *Social profile*: Teachers - TBRS
DeKroon, D. M. A., Kyte, C. S., & Johnson, C. J.	2002	Partner influences on the social pretend play of children with language impairments.	*Language, Speech, and Hearing Services in Schools*	Multiple embedded case study 2 cases, 3cwDLD & 4 TD peers (all boys) 4-6 y/o CwDLD from Language Unit Dyadic play - 2cwDLD, 2TD, 2mixed	*Behaviour*: Play – non-social, social, social pretend; Conversational turn taking Playroom with age appropriated toys	*Language*: PPVT-R, Reynell Developmental Language Scales - Revised *Nonverbal reasoning*: NA
Fey, M. E., & Leonard, L. B.	1984	Partner age as a variable in the conversational performance of specifically language-impaired and normal-language children.	*Journal of Speech & Hearing Research*	6cwDLD & TD peers: 6 aged-matched, 6 younger & 6x adults 4-6 y/o Dyads –DLD with a partner from above groups, 3 dyads / cwDLD & 18x Same aged speaker control dyads & 9 Younger speaker dyads	Conversational performance Playroom with age appropriated toy	*Language*: PPVT-R, Developmental Sentence Analysis, Test of Auditory Comprehension of Language *Nonverbal reasoning*: Leiter International Performance Scale

Liiva, C. A., & Cleave, P. L.	2005	Roles of initiation and responsiveness in access and participation for children with specific language impairment.	*Journal of Speech, Language, and Hearing Research*	Group comparisons 10 cwDLD, 13 TD peers 5-7 y/o 23 triads: Target child (sample above & 2 unfamiliar TD) 9 mainstream schools in Canada	Observation of triads *Behaviour*: Utterances addressed to each child; Access episodes; Partner inclusion bids; Play – group / individual / onlooking Playmobile in a room	*Language*: CELF-III *Nonverbal reasoning*: TONI-II
Murphy, S. M., Faulkner, D. M., & Farley, L. R.	2013	The behaviour of young children with social communication disorders during dyadic interaction with peers.	*Journal of Abnormal Child Psychology*	112 children from mainstream schools 32 dyads low pragmatic (LP) & average-high pragmatic (A-HP), and 24 dyads A-HP only Britain	Collaborative computerised dyadic task, familiar peer from class Task performance – number of hidden treasures Language performance	*Language*: Test of Pragmatic Skills, BPVS, teachers – CCC-2
Musselwhite, C. R., St Louis, K. O., & Penick, P. B.	1980	A communicative interaction analysis system for language-disordered children.	*Journal of Communication Disorders*	9 cwDLD; 7 y/o Dyadic interactions United States	Cooperative play, dyadic *Communicative interaction*: number of interactions & percentage of successful interactions *Language, expressive*: Mean length of Utterance in Morphemes, Completeness, Complexity	*Language*: BPVS, auditory Association and Grammatic Closure Subtest (Illinois Test of Psycholinguistic Abilities)
Robertson, S. B., & Ellis Weismer, S.	1997	The influence of peer models on the play scripts of children with specific language impairment.	*Journal of Speech, Language, and Hearing Research*	Experiment 20 cwDLD (10 in experiment & 10 in control) & 10 TD peers 3-5 y/o (unfamiliar) Dyadic play, 4x15min in 3 weeks 2x studies (Experiment vs Control DLD; Control DLD and effect of a partner DLD/TD) United States	Dyadic play observation *Communicative interaction*: no of words, no of different words, no of play-theme-related acts; linguistic markers Study 1: Playing house with a TD peer, pre-set room Study 2: 6x children from DLD-Control group and DLD partner or TD partner)	*Language*: CELF-R, PPVT-R, MLU Miller's (19881) criteria *Nonverbal reasoning*: WISC-R

Salmenlinna, I., & Laakso, M.	2020	Other-initiations of repair by children with developmental language disorder in speech-language therapy and non-institutional play.	*Clinical Linguistics & Phonetics*	2x boys with DLD 6-8 y/o Parent & peer play (a sister and a friend) Finland	Different play settings – dyadic – therapy, parent-child & peer play (semi-structured) *Verbal requests/initiations* – open requests & clarifications A variety of toys	Doctor records *Language*: Reynell Developmental Language Scales -Revised, Boston Naming Test, Illinois Test of Psycholinguistic Abilities
Stevens, L. J., & Bliss, L. S.	1995	Conflict resolution abilities of children with specific language impairment and children with normal language.	*Journal of Speech and Hearing Research*	30 cwDLD equally split into 2 groups 8-9 y/o (younger) & 11-12 y/o (older group) cwDLD also split based on language impairment Expressive (13) & Rec-Exp (n = 15) based on taking Token test	Conflict resolution strategies – task & enactment Task – retell the story to determine understanding, resolution strategies Dyadic (DLD-DLD, TD-TD) role play, similar language ability Computer-generated pictures depicting situation	*Language*: PPVT-R, Expressive One-Word Picture Vocabulary Test, Test of Language Competence for Children, Test of Language Development - Intermediate Edition, Test of WORD Finding, Token Test for Children, WORD Test, Diagnostic Achievement Battery *Nonverbal reasoning*: WISC-R, Leiter International Performance Scale, Test of Nonverbal Intelligence

Appendix D: Tools in the systematised literature review

The systematised literature review (Chapter 4) analysed empirical evidence in a number of analytical steps: *categorisation, within category analysis, across category analysis, drawing conclusions*. To organise the academic articles and publications and support the analysis, MAXQDA software application was used. As illustrated in Figure D.1, I organised the documents in categories, corresponding to the document groups in the tope left part.

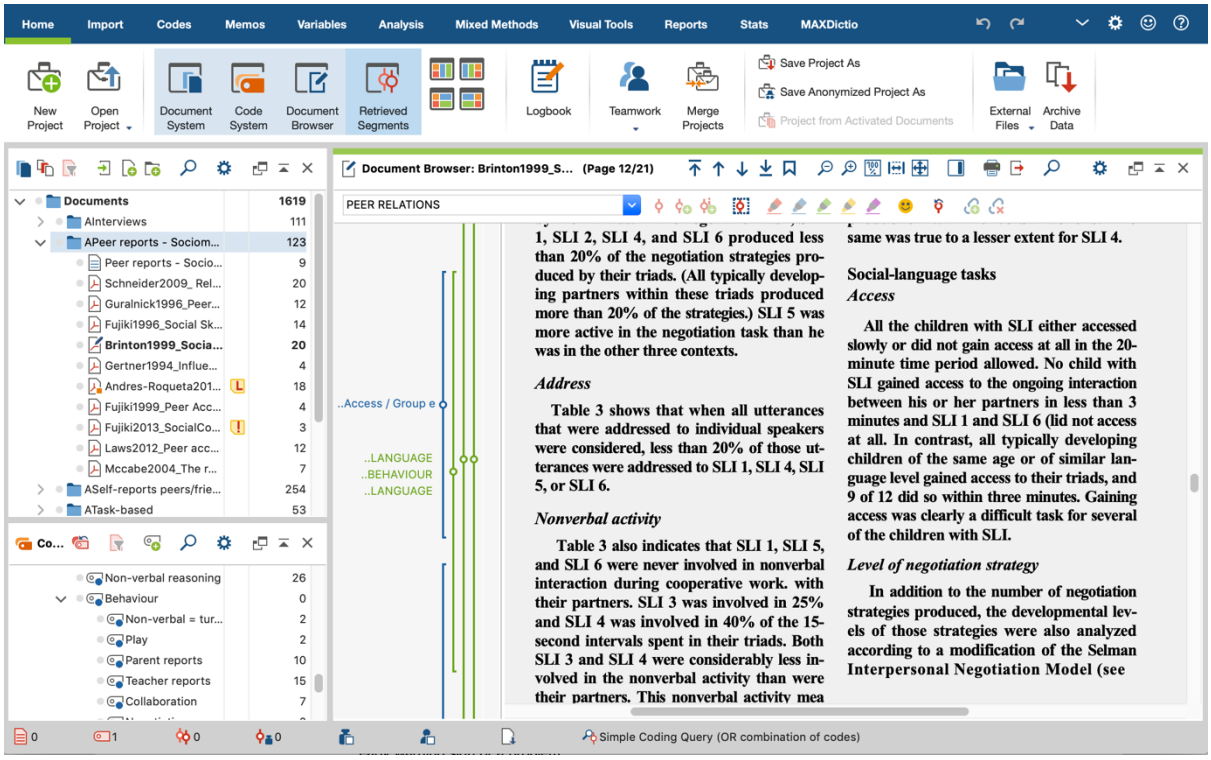

Figure D.1 Screenshot of a systematised review analysis in MAXQDA

Figure D.1 further shows the application offers multilevel coding of data with a plenty of visual support. In addition to the computer-assisted programme, within each category of studies, a summary sheet and mind map of studies' findings were prepared to list the most relevant information for the within group narrative synthesis. All these supportive tools were also used in the cross category analysis.

Appendix E: Children's Communication Checklist (CCC-2)

Table E.1 Psychometric properties of CCC-2

Name of the tool	**Children's Communication Checklist (CCC-2) with General Communication Composite (GCC) & Social Interaction Deviance Composite (SIDC)**
Respondent	Parent/carer/educator/therapist
Delivered by	Same as above
Tools / Format	10x scales with individual standard scores & percentiles: speech, syntax, semantic, coherence, inappropriate initiation, stereotyped language, use of context, nonverbal communication, social relations, interests
Description	Pragmatic, receptive and expressive language assessment tool
Author, date, publisher	Bishop, 2003, The Psychological Corporation
Target age group	4 – 16-year-olds
UK norm reference	Yes
Reliability	Overall: reliability coefficient r ranges from .86 to .96 GCC: reliability coefficient r ranges from .94 - .96 Inter-rater reliability of ± .80, with internal consistency of ± .867 for rater A and ± .797 for rater B.
Validity	Concurrent validity established
Considers cultural & language diversity	Not fully as bilingual children excluded from validation
Number of items	70
Training required	No, CL2 test (psychologist, graduate in the field)
Duration (approximate)	5 – 15 mins
Availability	Chirpp study in PEDAL
Info for parents/ carers	Not specifically but parents/carers can use for assessment
Used in peer relations studies of cwDLD (e.g.)	Yes (Andres-Roqueta, Adrian, Clemente & Villanueva, 2016; Laws, Bates, Feuerstein, Mason-Apps, & White, 2012)

Appendix F: Strengths and Difficulties Questionnaire (SDQ)

Table F.1 Psychometric properties of SDQ

Name	**SDQ and impact supplement version for parents/carers and teachers**
Respondent	Parents/carers, teachers
Delivered by	Same as above
Tools / Format	5 dimensions: - Emotional (5) - Conduct (5) - Hyperactivity/inattention (5) - Peer relationship problems (5) - Prosocial behaviour (5)
Scale	Likert 3-point
Description	Behavioural assessment of children with a supplemental version to enquire whether the respondent thinks a child experiences difficulties
Author, date, publisher	Goodman, R., 1997, Journal of Child Psychology and Psychiatry
Target age group	4-16-year-olds
UK norm reference	Yes
Reliability	Internal reliability Cronbach's alpha of .847. External reliability established via test-retest method ($r = .752$, $N = 232$, $p < .01$) Interrater correlations between parents/carers and teachers ranged from .37 (Prosocial Behaviours) to .65 (Conduct Problems). Overall interrater reliability was .62, $p < .02$. *note that Peer Problems and Prosocial Behaviour scales have no equivalent in Rutter questionnaire.
Validity	Sufficient concurrent validity established via correlations with Rutter questionnaires (Elander & Rutter, 1996) ranging from .78 to .88 parents/carers' and .87 to .92 teachers' correlations.
Considers cultural & language diversity	Not reported
Number of items	25
Training required	No
Duration (approximate)	10 - 15 mins
Availability	Free
Info for parents/carers	NA
Used in peer relations studies of cwDLD (e.g.)	Yes (e.g. Myers, Davies-Jones, Chiat, Joffe & Botting, 2011; Yew & O'Kearney, 2015)

Appendix G: Ravens' Coloured Progressive Matrices

Table G.1 Psychometric properties of Ravens

Name of the tool	Raven's Coloured Progressive Matrices (CPM)
Respondent	Child
Delivered by	Researcher
Tools / Format	36 visual geometric designs with a missing piece, 6 options to pick from and identify the missing piece
Description	Assessment of nonverbal ability, general cognition of children
Author, date, publisher	Raven, 2004, Oxford Psychologists Press
Target age group	4-11-year-olds
UK norm reference	Yes
Reliability	CPM: split-half reliability coefficient .97; Correlation with a parallel test .87; SEM 2.62
Validity	Established content, construct and criterion-related validity, details are available in the manual
Considers cultural & language diversity	Yes
Number of items	NA
Training required	No, CL3 (advanced training not needed)
Duration (approximate)	15 min
Availability	Faculty of Education library
Info for parents/ carers	Available to download in pdf
Used in peer relations studies of cwDLD (e.g.)	Yes, (Andres-Roqueta et al., 2012; Mok, Pickles, Durkin & Conti-Ramsden, 2014)

Appendix H: Assessment of Comprehension and Expression 6-11

Table H.1 Psychometric properties of ACE 6-11

Name of the tool	**Assessment of Comprehension and Expression 6-11: Sentence Comprehension and Naming**
Respondent	Child
Delivered by	Researcher
Tools / Format	Sentence Comprehension – 35 statements describing a scenario, children to select the corresponding picture from 4 options Naming – 25 pictures to be named by a child
Description	Assessment of expressive abilities and linguistic comprehension
Author, date, publisher	Adams, Coke, Crutchley, Hesketh, & Reeves, 2001, GL Assessment
Target age group	6-11-year-olds
UK norm reference	Yes
Reliability	Test-retest 75.9%; Internal consistency 77.8%
Validity	42.9 content, 25 structural validity
Considers cultural & language diversity	Yes
Number of items	5 core and 2 additional subtests, number of items varies with individual subtest
Training required	Yes, detailed guidance included in the manual
Duration (approximate)	The full assessment can take up to one hour, based on children's abilities; selected subtests 15 mins in total
Availability	Faculty of Education library
Info for parents/ carers	NA
Used in peer relations studies of cwDLD (e.g.)	Not specifically peer relations but studies targeting cwDLD (e.g. Gibson et al., 2013; Hardiman, Hsu, & Bishop, 2013)

Appendix I: Clinical Evaluation of Language Fundamentals (CELF-4)

Table I.1 Psychometric properties of CELF-4

Name of the tool	**Clinical Evaluation of Language Fundamentals Assessment of Comprehension – Sentence Recall**
Respondent	Child
Delivered by	Researcher
Tools / Format	Sentence Recall – child will imitate sentences presented by the researcher
Description	Evaluating language abilities and determining language impairment at clinical level
Author, date, publisher	Semel, Wiig, & Secor, 2006, Pearson
Target age group	6-16-year-olds
UK norm reference	Yes
Reliability	Test-retest reliability of subtests 75.9; Internal consistency Cronbach's alpha ranges .69 to .91 for subtests and from .87 to .95 for composite scores; The split-half reliability ranges from .71 to .92 for subtests and from .87 to .95 for composite scores; Inter-scorer decision agreement for subtests that require clinical judgments and interpretation of scoring rules ranged from .88 to .99
Validity	Established content, concurrent, and construct validity
Considers cultural & language diversity	Yes
Number of items	19 subtests in total, number of items varies, for Sentence Recall – 32 items in total but assessment stops if child makes 5 major mistakes in a row
Training required	Yes, detailed guidance included in the manual
Duration (approximate)	30-60 minutes
Availability	Faculty of Education library
Info for parents/ carers	Yes, as part of the Observational Rating Scale
Used in peer relations studies of cwDLD (e.g.)	Not peer relations but studies targeting cwDLD (e.g. Bakopoulou & Dockrell, 2016; Gibson et al., 2013; Farmer, 2000; Timler, Olswang, & Coggins, 2005;)

Appendix J: Traditional social competence tools

Traditional tools assessing social competence target social cognition process and often include theory of mind, emotion recognition, and knowledge. I used these tools with children with Developmental Language Disorder (DLD) and reflected on some of their performance in the narrative description of case summaries (Chapter 5). Below is a brief overview of the tools that I deployed.

Theory of mind

Tools assessing the second-order theory of mind regularly test false beliefs and emotion recognition in self and others. False-belief tasks have been commonly used to evaluate children's understanding of mind because passing these basic tasks marks a significant developmental milestone (generally at the age of four), showing children's awareness that beliefs represents a reality that can be mistaken (Hughes et al., 2000). The assessment is quick, sensitive to developmental changes (Hughes et al., 2000) and has demonstrated low performance of autistic children who tend to struggle with daily social tasks and communication (Sullivan et al., 1994). Using this tool had no intent to suggest a potential social impairment of participating children who may fail. Instead, the theory of mind informed about children's social cognition profile.

The tool deployed in the project used three stories accompanied with illustrations. An unexpected location story, *Chocolate* (Sullivan et al., 1994) reused by Hughes et al. (2000),is based on more complex, story-based tasks providing a child passes the first order test. A modified version of Perner and Wimmer (1985), *Ice Cream* and surprise *Bike* stories (Sullivan et al., 1994) included first-order belief tests in order to streamline the actual data collection process (Gibson & Fink, 2019). After introducing the basic plot, children were asked a couple of control questions. Pass and fail scoring designed was followed, and reasoning provided with answers was noted.

Emotion attribution accuracy

Emotion recognition was assessed using the emotion expression understanding component of the Assessment of Children's Emotion Skills (ACES) battery (Schultz et al., 2004b). Photographs displaying prototypical facial expressions of children of primary school age are

available for free. The score is a sum of correctly assigned emotions to faces (Schulz et al., 2004a). A shortened version of 10 photographs was be used.

Emotion comprehension

Pons et al. (2004) summarised the research findings regarding the development of emotion understanding in nine areas and have accordingly proposed the Test of Emotion Comprehension (TEC; Pons & Harris, 2000). Namely, emotion recognition, external emotional causes, impact of desire on emotions, emotions based on beliefs, memory influence on emotions, emotional regulation, possibility of hiding an emotional state, having mixed emotions, and contribution of morality to emotional experiences (Pons & Harris, 2000; Pons et al., 2004). Each area is deemed to develop during a specific time period and selected components corresponding to ages group were used. These included Component III *Diverse desires*, IV *Belief based emotions*, and VII *Control or hiding emotions* (Pons & Harris, 2000; Pons et al., 2004). The TEC is illustration-based and interactively delivered through short cartoons, where children can lift a flap hiding an object or person (Pons & Harris, 2000; Pons et al., 2004). As part of the social understanding measure, the abbreviated version of TEC will be used in data collection.

Appendix K: Sociometric assessment

Children's perceptions of peers represent another means of assessing social competence, commonly measured using peer nomination (Coie et al., 1982; Parker & Asher, 1993; Sanderson & Siegel, 1995) and peer reputation methods (e.g. Bower, 1969; Lambert & Bower, 1961; Tuddenham, 1952). Peer nomination indicates peers' perceptions of a child, in terms of the child's role in the functioning of the group and how the child is being accepted or rejected in the group (Parker et al., 2015). The likeability or rejection by peers has been giving relatively stable results and changes that occur would move children to average from either acceptance or rejection status, but not to the opposite nomination (Parker et al., 2015). Therefore, researchers can assume that peer nominations reflect on children's social skill and individual characteristics (Parker et al., 2015).

In friendship nomination, children give three names of peers they like to play with most and three names of the least preferred peers (Coie et al., 1982). The responses are counted and standardised before they are combined "into social status of social preference (Liked Most minus Liked Least votes) and social impact (Liked Most plus Liked Least votes)" (Coie & Dodge, 1983, p.263). As shown in Figure K.1, the social status categories of rejected, popular, neglected, controversial and average depend on the score combination of social preference and social impact (Coie et al., 1982).

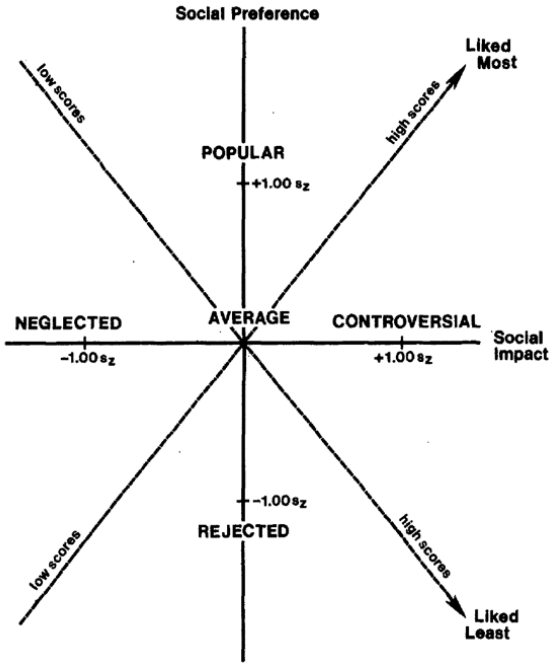

Figure K.1 Social status categories of friendship nomination (Coie et al., 1982, p.563)

The same procedure was adopted in part 2 of this project. The below categories of Social Status were identified:

Popular = social preference score greater than 1.0 and Liked Most standardised score above 0 and Liked Least standardised score of less than 0)

Rejected = social preference score of less than -1.0 and Liked Least standardised score of greater than 0, and a Liked Most standardised score of less than 0

Neglected = social impact score of less than -1.0 and Liked Most and Liked Least standardised scores of less than 0

Controversial = social impact score of greater than 1.0 and Liked Most and Liked Least standardised scores that were each greater than 0

Average = social preference score greater than -.5 and less than .5 (Coie et al., 1982, p.564).

In addition to peer nomination and reputation, reciprocal friends were identified by asking children to list their three best friends and cross-referencing their responses (Sanderson & Siegal, 1995). If a child with DLD did not receive reciprocal nomination, the criteria were expanded to receiving a nomination among three best friends regardless of reciprocity (Fujiki et al., 1999a; Nangle et al., 2003). Identified friends were confirmed with teachers and teaching assistants. Identifying friends led to qualitative interviews with participating children with DLD and their friends.

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Appendix L: Participant information sheets

184 Hills Road, Cambridge, CB2 8PQ

Playing together: Study to investigate how do young children develop and establish friendships

Parent/Carer information

Dear Parent / Carer,

Thank you for showing interest in a study that I am carrying out as part of my PhD study at the Faculty of Education at the University of Cambridge.

Primary school children with a history of language difficulties and their friends and classmates are being invited to participate because I am studying inclusive classrooms and school settings. This research, funded by the LEGO foundation, aims to better understand how children's interactions and play with their classmates relate to their feelings, friendships and behaviour in primary school. The project has received ethical approval from the Ethics Committee of the Faculty of Education, University of Cambridge.

Please take time to read the following information carefully and discuss it with others if you wish. Contact me if there is anything that is not clear or if you would like more information.

What does the study involve?

Participation in this study involves you filling in a questionnaire. After collecting parental questionnaires, a small number of children will be selected for a follow-up so that we can understand their experiences in more depth. Children will be chosen for follow up using the information from the questionnaires. We will aim to get an illustrative sample; and we will also take into account practical considerations such as travelling distance from Cambridge, when choosing the children to follow up.

If your child is selected for follow-up, I will visit them at school and conduct classroom observations. Your child will complete some activities with me and I will ask them to tell me about their friends. The activities will take place during 4-6 sessions of approximately 20 minutes each, depending on your child's attention span. The activities have been used with children many times before and they usually enjoy doing them very much. They involve talking, listening to stories about their feelings about friends and about school, and, drawing and describing pictures. I will also observe your child playing with a classmate. Video and audio recordings of your child will be made as part of this study. These recordings will only be accessible to me and my supervisor and will be used only for the purpose of research. Your child's identity will be protected at all times.

Teachers will be asked to complete some short questionnaires about your child's classroom behaviour.

Do I have to take part?

Participation is voluntary and your child will take part only if you give consent. If you agree that your child can participate, you are free to withdraw your consent and to discontinue your participation at any time. Changing your mind is fine and there is nothing to worry about in terms of your relationship with the school or University if this happens. In addition, because of your child's age, the teacher and/or myself will terminate any aspect of the study if having any concerns about your child's welfare, although this is not at all expected to occur.

What are the possible advantages of taking part?

I cannot assure you that your child would directly benefit from participating in the study. There will be indirect benefits however, and your child's participation will enhance our understanding about the friendships and the wellbeing of children with language and communication difficulties. I don't envisage any negative consequences for you or your child in taking part. All the activities are designed to be age appropriate and fun for children to do. Access to the results of the study will be provided.

What will happen to the information which you and your child give?

All data will be identified by an anonymous code (not by yours or your child's name), kept confidential and locked in an offline secure location at University of Cambridge with access only by the researcher and supervisor. University of Cambridge is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. University of Cambridge will keep identifiable information about you 1 year until the study has finished.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible.

Cambridgeshire Community Services (CCS) NHS Trust will use your name and contact details to contact you about the research study, and make sure that relevant information about the study is recorded for your care, and to oversee the quality of the study. Individuals from the University of Cambridge and regulatory organisations may look at your medical and research records to check the accuracy of the research study. CCS NHS Trust will pass these details to the University of Cambridge along with the information collected from you. The only people in the University of Cambridge who will have access to information that identifies you will be people who need to contact you to collect the data or audit the data collection process. The people who analyse the information will not be able to identify you and will not be able to find out your name or contact details. CCS NHS Trust will keep identifiable information about you from this study for 1 year after the study has finished.

This information will not identify you and will not be combined with other information in a way that could identify you. The information will only be used for the purpose of health and care research, and cannot be used to contact you or to affect your care. It will not be used to make decisions about future services available to you, such as insurance.

The study results will be presented in a doctoral report assessed by my supervisor, and examiners. The report might be read by future students on the course. The findings from the study may be published in a research journal or presented in conferences. In line with best scientific practices, completely anonymous data from the study may be made available to other researchers (as is the case of the Millennium Cohort Study). This will not include the audio or video data. Children's names, schools and other confidential aspects of the study will not be revealed in any published documents or presentations.

What if I require further information?

If you have any questions about the study or require further information you are welcome to contact Lenka Janik Blaskova, mobile: [Taken out from this dissertation copy due to GDPR] This information document is for you to keep.
Yours sincerely,

Lenka Janik Blaskova

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184 Hills Road, Cambridge, CB2 8PQ

Playing together: Study to investigate how do young children develop and establish friendships

Children information

Hello ☺

My name is Lenka and I am a student at the University of Cambridge. In my research, I am learning about children and how they make friends in school. I am doing this research as part of my PhD studies. I have a supervisor, who is an experienced lecturer and researcher at my Faculty and has been helping me out.

I would like to ask for your help because I am curious about what you think makes a good friend, how you feel in school and how you play with your friends.

What will I need to do?

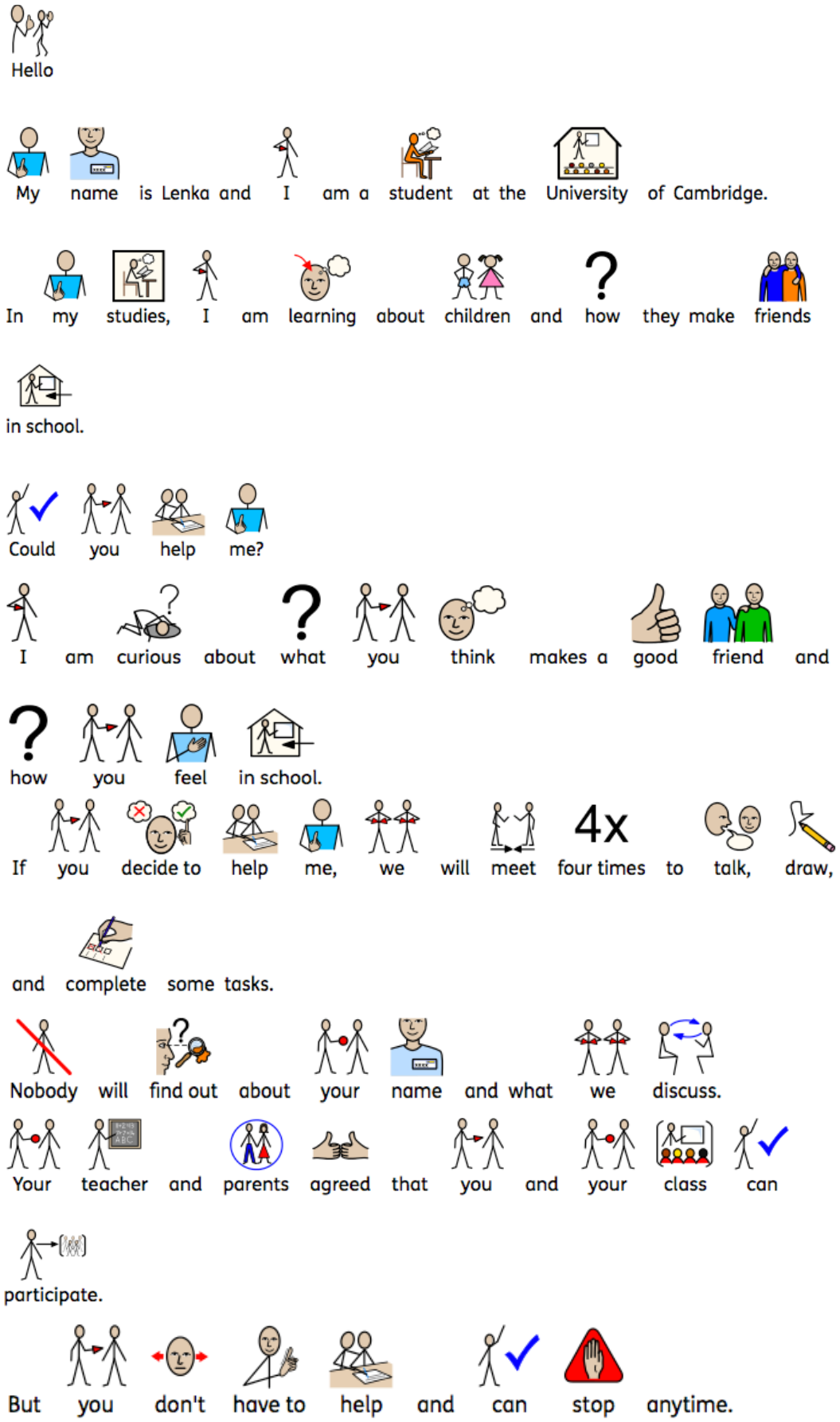
If you decide to help me, at first, we will do a quick friendship activity in your classroom. Later on, we will meet together four times and I will tell you a story or show you a picture and ask you about what other people think or feel. I will also invite you to tell me about your friend from your class. We will do some quick activities and name pictures, complete stories and other similar activities. On a different occasion, you will also be able to see me in your classroom. I will sit in quietly to see how you and your classmates work together during the class. At our last meeting, you will also be able to play with Lego with your friend.
Your experiences would help me understand how children see their friends and how they feel in school. I believe that what I learn from you will help other children in future.

Who will find out about my answers?

I will make sure that other people cannot learn about your name and personal details. In our meetings, I will record what we will both say so that I can capture all the details. I will also videotape you playing with your friend. All recordings will be available only to me and my supervisor. I will transcribe them and may use some of your quotes in my report or journal articles. I will not use your name or other details to ensure that no one will find out what you have told me.

Do I have to take part in the study?

I would be delighted to hear from as many children as possible because what you think is very important to me. Your Head teacher and classroom teacher agreed that your class can participate. However, you do not need to take part unless you really want to.


Hello
My name is Lenka and I am a student at the University of Cambridge.
In my studies, I am learning about children and how they make friends
in school.
Could you help me?
I am curious about what you think makes a good friend and
how you feel in school.
If you decide to help me, we will meet four times to talk, draw,
and complete some tasks.
Nobody will find out about your name and what we discuss.
Your teacher and parents agreed that you and your class can
participate.
But you don't have to help and can stop anytime.

Appendix – Amendment History

Amendment No.	Protocol version no.	Date issued	Author(s) of changes	Details of changes made
1	2.0	23rd Mar 2019	Lenka Janik Blaskova	Title change from '*Playing together: Peer relations and wellbeing of children with Developmental Language Disorder' to a* new title '*Playing together: Study to investigate how do young children develop and establish friendships'* IRAS project number added to the footer "*Access to the results of the study will be provided." Was* added to the section *'What are the advantages of taking part.'* Amended the wording of section '*What will happen to the information which you and your child give?' t*o comply with GDPR and use the recommended transparency wording published by HRA
2	2.1	5th Apr 2019	Lenka Janik Blaskova	A note added about classroom observations: *I will visit them at school and conduct classroom observations.*
3				NHS logo

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Appendix M: Participant consent forms

Playing together: Study to investigate how do young children develop and establish friendships

Consent Form

If you agree with your child participating in this study, then please complete this consent form. A completed form will be securely filed at the University of Cambridge.

Name of Child: ……

Please tick box:

1. I give permission for my child to participate in this study. ☐
2. I confirm that I have read the information sheet for this study, have had an opportunity to consider the information, ask questions and received satisfactory answers. ☐
3. I understand that my child's participation is voluntary and that I am free to withdraw their participation at any time without giving any reason. ☐
4. I understand that my child's responses may be audio/video recorded to ensure accuracy of results. Any recording will be kept confidential and will be kept in a secure location. ☐
5. I understand that anonymous information collected about my child may be used to support other research and that these data may be presented at professional conferences or in academic manuscripts. ☐
6. I understand that I will receive a written summary about the study and can opt out by contacting the researcher. Email or postal address for receiving the summary: ☐
   ……

Signature of Parent/Carer:……
Name (Please PRINT): ……
Date: ……
This study has been approved by the *Ethics Committee of the Faculty of Education, University of Cambridge*.
Researcher's Signature: ……

Filing copy – please return this form

UNIVERSITY OF CAMBRIDGE

Faculty of Education e, CB2 8PQ

NHS Cambridgeshire Community Services NHS Trust

Playing together: Study to investigate how do young children develop and establish friendships

Consent Form

If you agree with your child participating in this study, then please complete this consent form. A completed form will be securely filed at the University of Cambridge.

Name of Child: ……

Please tick box:

1. I give permission for my child to participate in this study. ☐
2. I confirm that I have read the information sheet for this study, have had an opportunity to consider the information, ask questions and received satisfactory answers. ☐
3. I understand that my child's participation is voluntary and that I am free to withdraw their participation at any time without giving any reason. ☐
4. I understand that my child's responses may be audio/video recorded to ensure accuracy of results. Any recording will be kept confidential and will be kept in a secure location. ☐
5. I understand that anonymous information collected about my child may be used to support other research and that these data may be presented at professional conferences or in academic manuscripts. ☐
6. I understand that I will receive a written summary about the study and can opt out by contacting the researcher. Email or postal address for receiving the summary: ☐

   …….

Signature of Parent/Carer:……

Name (Please PRINT): ……

Date: ……

This study has been approved by the *Ethics Committee of the Faculty of Education, University of Cambridge*.

Participant copy – keep this copy of the Consent Form for your own records

Appendix – Amendment History

Amendment No.	Protocol version no.	Date issued	Author(s) of changes	Details of changes made
1	2.0	23rd Mar 2019	Lenka Janik Blaskova	Title change from '*Playing together: Peer relations and wellbeing of children with Developmental Language Disorder' to a* new title '*Playing together: Study to investigate how do young children develop and establish friendships'* Added note on filing arrangements.
2	2.1	5th Apr 2019	Lenka Janik Blaskova	Added point 6 about receiving a summary of the study
3	2.2	18th Apr 2019	Lenka Janik Blaskova	Copied the form to create versions for filing and participant's records Added comments: *'Filing copy – please return this form'* *'Participant copy – keep this copy of the Consent Form for your own records'*
4				Adding NHS CCS logo

Appendix N: Interview schedules

ID of Child: Date:

Location: School settings: Mainstream/Special/ Language Unit

Friendship Interview schedule

Instructions I am a student at the University of Cambridge and I came to your school to learn more about friendships among children in school. I am really happy that you decided to help me. I also want to make sure that you know you do not need to. Only if you want. And so at first, we will play a game with the cards. You may be used to using some of these symbols.

Point at the agree/disagree/yes/no/break/ happy/sad… symbols

Do you know some of them?

Ok great, so you can choose any of them to answer my questions if you want, or else you can just tell me. I also wanted to tell you there are no right or wrong questions. I am interested in learning about you and your friends in school.

So let's start with my first question. Are you happy to answer some of my questions?

Are you ok if I take notes and record your answers?

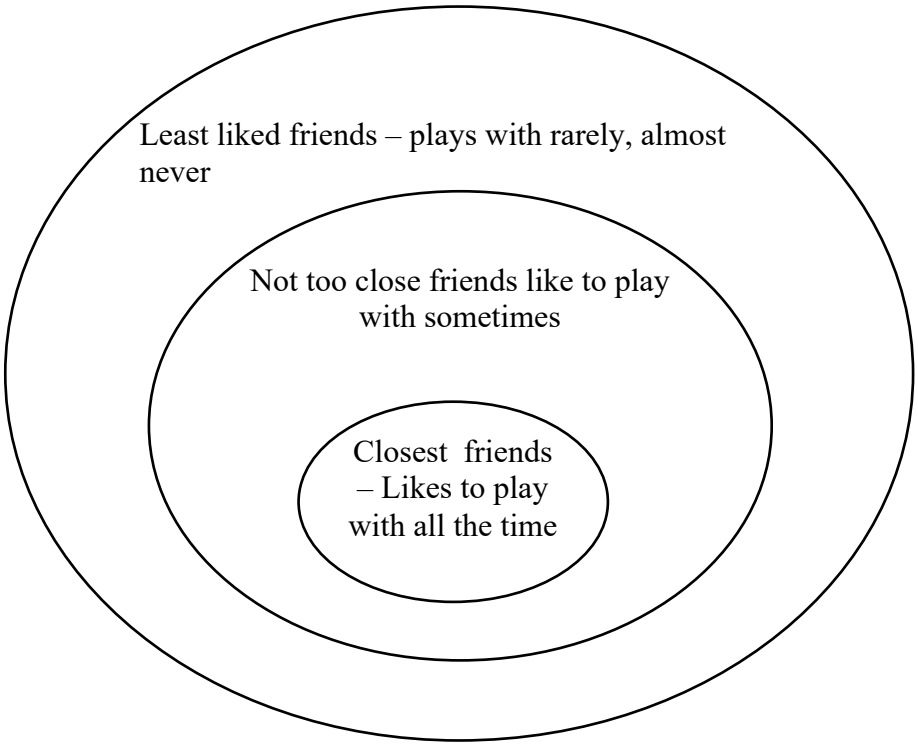
Great. So now, I would like to invite you to answer a few question about your friends and draw pictures for me. Is that ok?

1.1 How I feel about my friends in school

1.2 Circle of friends

Demonstrate the activity:

We are talking about our friends, what we do together in school, which friends makes us feel good or not so good at school. This is me *(draw yourself in middle of circles)*. I really liked my friend Milena, because she was telling jokes and helped me with homework *(draw face of Milena close to me in the middle).* I had a friend called Judy. I didn't like Judy as much as Milena, because she wasn't very nice to me and used to interrupt me all the time and take the micky *(put Judy's face at the outside of the circle).*



Can you draw yourself in the middle of their picture? And could you also draw your friends from school and tell me about them?

Why do you like them? Why not?

1.2 Friendship quality by Dunn, Cutting and Fisher (2002)

I would like to learn more about [friend in the middle] and it would be great if you could tell me more about her/him. I will ask you a few questions. Is that ok?

Question	Supplementary probes
1. What kinds of things does [friend] like playing?	And what else?
2. What makes [friend] happy?	Is there anything else that makes [friend] happy?
3. What makes [friend] sad or upset?	Can you think of anything else that makes [friend] sad or upset?
4. What do you really like about [friend]?	Can you tell me more about how [friend] is/does [characteristic, behaviour]?
5. Sometimes friends annoy each other; is there anything you don't like about [friend]?	Is there anything else that you don't like about [friend]?
6. Do you do things together much at school?	How often do you do things together at school?
7. What do you usually play together?	How often do you play that?
8. Who decides what you play?	How often does [participant/friend] decide what you play?
9. Do you have fun together?	When do you usually have fun?
10. Do you and [friend] tell each other secret things and feelings?	How often do you tell each other secrets? How much
11. Most friends fall out or have arguments sometimes; have you ever got cross with [friend]?	What happened? How did it finish? How did you feel about it? Do you often fall out like that?
12. Do you usually play just with [friend], or are there other children who play with you both?	Who are they? How often do they play with you and [friend]?

1.3 Drawing a friends

Ok, and now I would like to invite to you to draw a picture if you want. Do you feel like drawing?

Could you draw your friend?

Allow enough time for the child to draw. Tell them that you will do some work [write down notes] and ask them to let you know when they are finished. Check with the child in 5 mins.

You can say:

Oh wow, this looks really cool! I cannot wait to hear about your drawing.

You have a couple more minutes to finish up.

[3 minutes later] **Ok, if you wish, you can tell me about your drawing and finish it up later. Take your time.**

Who is in the drawing? Do you like playing with them? (McLeod et al., in Roulstone & McLeod, 2018)

What makes you think [friend's name] **is your friend?** [Probe about communication and behaviours] (based on Lee, Yoo & Bak, 2003)

What do you do together? (based on Lee, Yoo & Bak, 2003)

How is your friendship with [friend's name] **different from other children in your class? What makes it different?** (based on Lee, Yoo & Bak, 2003)

What do you usually play?

Explore the below drawing focal points (Holliday, Harrison & McLeoud, 2009)

- **Talking and listening**
- **Accentuated body features**
- **Facial expressions**
- **Colour and vitality**
- **Sense of self**
- **Negativity (no partner, scribbling)**

ID of Child: Date:

Location: School settings: Mainstream/Special/ Language Unit

Wellbeing Interview schedule

3.1 Illustrations activity

Place pictures [illustration from Merrick (2009), own photos on friendship] on the table for the participants to look at. Distribute cards with X and √ and smiley/frown faces around the table.

Ask the child: Could you put these pictures into the place they feel most appropriate?

Point at a random picture from each category and ask

Can you tell me about why this picture goes here?

Pick up unusal choices and comment

This one is interesting. I wonder how this picture goes under the good/bad/undecided category. Can you tell why?

Repeat with other unusual choices.

3.1 Talking about pictures

When the child stops interacting or being responsive to Illustrations activity, pick up pictures from Picture Me activities book and place them on a table saying:

I have a couple more pictures. They are colourful and show entire classroom. Look!

Let the child explore the scenarios depicted on pictures and ask:

Do you like any of these pictures?

What do you think is going on here?

What picture you do not like?

What is happening there?

Finish the activity by moving on to talking about the child's wellbeing experiences in school.

3.3 Wellbeing questions

Make the transition by [for example] saying:

So now, we have seen pictures about classrooms and how children talk to each other. I would like to know more about you.

Start asking the questions about School, based on Lyons and Roulstone (2018):

Question	**Supplementary probes**
Can you tell me about school?	How do you like it? What do you like about school? What don't you like?
Can you tell me about what happens in a day in school, for example, maybe what happened yesterday?	What did you do? Who was there? What did they do? How did you feel?
Can you tell me a story about your best day in school?	What did you do? What did your friend/s [name] do? Why did you like it? How did you feel?
Can you tell me a story about your worst day in school?	What happened? How did it happen? Who was there? What did they do? What didn't you like about it? How did you feel?
Can you tell me a story about how you learned something new in school?	What was it? Who told you about that? Did you talk about that with anyone? Who did you talk to? How is this person? Do you like them? Why?
Can you tell me about a time when you changed class or school?	What class [or school] did you go to? Did you know anyone there? How did you make friends? [If didn't change class/school] And can you remember how was it at the beginning of this year? After you came back from summer holidays? Were you looking forward to school or maybe not so much? Why?

ID of Child: Date:

Location: School settings: Mainstream/Special/ Language Unit

Friendship formation interview schedule

6.1 Friendship Formation

Take out the child's drawings from meeting 1 and all previously used illustrations to open the meeting with all the friendship and wellbeing related activities that have been done. Start the session with summarising what has been done, for example:

> **So we have met a few times now and I have learned a lot about your school and your friends** *[list names]***. Thank you for telling me about your stories and how you find your friends and school** [mention specific examples that the child had talked about]**.**
>
> **I remember you told me that your best friends is** [name of the best friend] **and that you do not like to play much with** [name of the least liked classmate]. **Now I am curious what you think about friends and friendship.**

Follow the below friendship formation questions of Selman (1980)

Question	**Supplementary probes**
Why are friends important? Why does a person need a good friend?	Is there anything else?
Is it easy or hard to make a good friend?	Why? Why is it sometimes ___ (the opposite)?
What kind of person makes a good friend?	What else makes them a good friend? Could you tell me more?
What kind of person would you not want as a friend?	Why is that important? What else would you like this person to be like or do?

Move to talking about the child's friends and personal experiences. For example say:

> **Thank you for telling me your thoughts about friends and why they are important. It is very useful for me to know. You have helped me a lot.**

Now, I would like to learn about your friends. You have told me about them [use names the child mentioned previously]. **You have drawn your friends [use names] in the circle of friends** [show them their drawing] **and you told me some stories** [mention specific examples].

Start asking the questions from the Peers section of the Wellbeing schedule based on Lyons and Roulstone (2018):

Question	**Supplementary probes**
Can you tell me about your friends? [use names previously given by the child]	How are they? Why do you like them? What don't you like about them?
What was the best thing you ever did with your friends?	How was it? How did you feel?
Can you tell me a story about when you made a new friend?	What did you do? How did you feel? Can you tell me more?
Can you tell me a story about when you had a fight or fell out with your friends?	What happened? What was it like? How did you feel?

Social Play & Friendship

- Play back videos and ask questions:
    - What were you playing?
      How do you play it?
    - Was this your friend?
    - What would you do if someone were playing mean?
    - How can you tell?

Appendix O: Transcription conventions

Symbol	Name	Use
[text]	Brackets	Indicates the start and end points of overlapping speech.
=	Equal Sign	Indicates the break and subsequent continuation of a single interrupted utterance.
@	Smile	
@@	Laughter	
(.)	Micropause	A brief pause, usually less than 0.2 seconds.
,	Comma	Indicates a temporary rise or fall in intonation.
-	Hyphen	Indicates an abrupt halt or interruption in utterance.
ALL CAPS	Capitalized text	Indicates shouted or increased volume speech.
:::	Colon(s)	Indicates prolongation of an utterance.
(Hx)		Audible exhalation
(H)		Audible inhalation
(text)	Parentheses	Speech which is unclear or in doubt in the transcript.
((italic text))	Double Parentheses	Annotation of nonverbal activity, researcher's comments.

Jeffersonian Transcription Notation is described in G. Jefferson, "Transcription Notation," in J. Atkinson and J. Heritage (eds), *Structures of Social Interaction*, New York: Cambridge University Press, 1984.

Discourse transcription symbols outlined in Du Bois, J.W., Cumming, S., Schuetze-Coburn, S., & Paolino, D. (Eds.). (1992). Santa Barbara Papers in Linguistics, Volume 4. *Department of Linguistics*, University of California, Appendix 7, pp.210-211.

Appendix P: Coding scheme

Theme	Codes	Subcodes (examples)
1. Language & communication 1to1 meetings	1.01 Speech & sound	Specific sound(s); Loud speech, emphasis
	1.02 Mixing words	Mixing words; Mixing phrases
	1.03 Learned phrases	Repeating words; Learned words, phrases
	1.04 Nonverbal communication	Gestures; Writing; Pointing
	1.05 Language & communication disconnection	Disconnected speech; My misinterpretations
2. Concepts of friendship formation	2.01 Purpose of a friendship	To play; To be happy, not alone; Don't know, no response
	2.02 CwDLD good friend	Nice, kind; Specific names of peers; Comes to my house
	2.03 CwDLD bad friend	Pushes over; Plays naughty; Mean to each other
	2.04 CwDLD making friends strategies	Play with children; Invite children to join a play; Just ask,'do you want to be my friend?'
3. Friends' perceptions of children with DLD	3.01 Friend's communication with cwDLD	No difficulties; Strategies to overcome barriers
	3.02 Friends like about cwDLD	Play & playful behaviours; Collaboration; Protective of friends
	3.03 Friends do not like about cwDLD	Don't know; Unpopular behaviours
	3.04 Disputes in friendships	None; Trust; Group dynamics
	3.05 Making friends advice to children with DLD	Join a play; Invite children to join a game; Offer help & support
	3.06 Friends' inclusive attitudes & behaviours	Inviting cwDLD to play; Caring; Inviting cwDLD to birthdays
4. Psychosocial attributes	4.01 Self-perception, self-concept	Generally liked; Good at games & play; Physical looks;
	4.02 Social cognition tasks	Passing ToM; Not passing ToM; Mixing emotions; Elaborate responses
	4.03 Playfulness	Creativity, own games & dance routines; Imaginary scenarios, pretend play
	4.04 Emotional wellbeing	Self-esteem; Less confident; Emotional outbursts; Emotion vocabulary
5. Behaviours 1to1 meetings	5.01 Help seeking	Not asking for help even if struggles;
	5.02 Fun, humour, creativity	Singing; Smiles, laughs; Makes jokes, silly; Pretending
	5.03 Connecting with me	Brings up casual topics & daily experiences; Asks me personal questions
	5.04 Competitiveness	Asking about other's performance; Checks if correct
	5.05 Engagement & flexibility	Inflexible with activities; Curious about tasks; Excitement from doing tasks
	5.06 Proactive	Takes over; Starts activities on their own;
	5.07 Autistic like	Disengaged with task; Inflexible changing tasks; Diversion
	5.08 Prosocial behaviours	Being polite, asking for permission;
6. Classroom & yard behaviours	6.01 Prosocial behaviours in class	Initiating interactions with peers; Helping peers: Acting silly
	6.02 Well-behaved	Follows the rules; Asks for permission
	6.03 Disengaged in class/yard	Tired; Not paying attention to teacher; Playing & being alone
	6.04 Approaching adults	Approaches teacher; Approaches teacher assistant; Approaches me
	6.05 Inclusive behaviours	Stays only with a friend; Invites others to join in; Being a sked to join others

Appendix Q: Case studies matrix

The presented version is a draft of the case study matrix used for preliminary analyses.

Child ID	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12	CH13	CH14
School settings	Enhanced provision	Enhanced provision	Enhanced provision	Mainstream	Specific S&L Class	Specific S&L Class	Specific S&L Class	Specific S&L Class	Specific S&L Class	Mainstream	Mainstream	Mainstream	Mainstream	Mainstream
Social status	Neglected	Neglected	Rejected	Average	Popular	Neglected	Popular	Controversial	Average	Average	Rejected	Popular	Rejected	Average
CHF social status	Popular	Average	Controversial	Rejected	Popular	Average	Average	Average	Popular	Popular	Neglected	Popular	Controversial	Popular
Friendship	Nominated; Non-reciprocal	Non-nominated	Nominated; Non-reciprocal	Reciprocal	Reciprocal	Nominated; Non-reciprocal	Reciprocal	Reciprocal	Nominated; Non-reciprocal	Reciprocal	Reciprocal	Reciprocal	Reciprocal	Reciprocal
CwDLD social preference	Rejected	Average	Rejected	Popular	Popular	Popular	Popular	Popular	Popular	Average	Rejected	Popular	Rejected	Neglected
Themes:	**Conceptualisation of friendship**													
CwDLD: purpose of friendships	Friends as play partners	Not to be bored, to play with someone	Participating on joined activities	Being kind to each other; Play together; Don't annoy others; To protect	Don't know; low abstract thinking	Friendship is to be friends forever	Don't know	To play together; To team up and be better at skills (running)	To protect; Almost as if teaming up against not friends	To have someone to play with, protect from others being rude, tell	To have someone to play with; It's nice to play with somebody	Friends not to be bored; To have someone to play with	To make more friends;	Not be miserable, to make you happy;
CwDLD: other friendship concepts	Exclusive, dichotomous understanding of friendships Names friends from Enhanced provision class (also in afternoon class)	Friendships as dichotomous	Dichotomous	At different levels; Involves compromising	Inclusive; Sitting together in class;	Dichotomous; Some friends can hurt feelings	Inclusive; plays with everybody	Inclusive	Friendships as dichotomous; Physical aspect important – distance (visiting house; holding hands) & looks (bad/good boy haircut); Inclusive	Friendships NOT as dichotomous, inclusive mindset; Seating in class	Exclusive – dichotomous, only CH11 and CH11F play together Inclusive – CH11F would still play with children with difficulties to communicate	Being together and also letting go; Intertwined fingers to demonstrate; Inclusive – 2BFFs; Friendships NOT as dichotomous; Have friends who play with others; Abstract conceptualisation of friendship – symbols; Takes time to be BFFs – a whole year in a class	Friendship at different levels;	Friendship is nice; Friend in other class; Different friends

CwDLD: making friends strategies	Non-verbal play strategies, not always responded to (observation)	Hard; Pass a favour	Play with someone	Language as an obstacle; Listen to Polish friends first; Play with children	Approaching/caring about peers when upset; Invite to play; Can be scary if don't know the children;	Go and ask "can you be my friend"	Introducing	Superhard; Nervous when in new school, not knowing peers; To play with them (advised by TA)	Play nicely	Ask, do you want to be my friend? If not, ask someone else. Invite children to join games	Hard if children say no to play – run off as strategy Be polite, behave well – follow the rules	Ask if you can be friends; Sit around if you are shy and wait to be approached; Approach new children; Hard when you don't know children; Easier when you have already friends - gatekeepers	Ask about their name; Ask if you can play with them; If not go to someone else	Approach peers first if you can be their friend; If difficulties speaking let someone else do it/teacher; Hard if you don't know anyone – teacher introduce to class; Likes the same game – shared interest; Go to someone else if rejected
CwDLD: good friend	NA	Nice, kind; Helps with work when cwDLD is stuck	Plays with me	Plays cwDLD's games	Gives names of classmates; Doesn't know when prompted; Behaves well towards the child	Kind; Jesus	NA	Helping	Caring; Share toys	Kind; Caring; Supportive - tells a teacher if something is wrong	Don't know	Kind; Helpful; Behaves well; Listens to teacher; Helps new children make friends	Don't know	Stick up for them; Friends as protective;
CwDLD: bad friend	NA	Bully – pushing over; Saying nasty words; Not playing with someone - exclusion	Tickling, fighting, naughty behaviours	Mean; Trying to make cwDLD gross things (nose picking)	Gives names of classmates; Mean when prompted	Understood via religion – lazy to pray; kill animals; don't behave well;	Not sharing	Physically hurting, chasing	Mean	Not good – physically pushing; Mean, horrible – saying rude words; Not behaving well at school	Physical – not nice if pushing, shoving, throwing shoes away	Mean to each other; Mean to different people; Mean to teacher	Don't know	Bossy, rude; Run away
Friend: purpose of friendships	Not to be alone and have fun in school	To have and know someone outside of family members	Not to be lonely, friends as companions	Playing; Sharing toys	CH7	NA	Friends as play companions; Make friends with other people; Be happy	CH9	CH8	As a gateway to more friends; Physical – lunch together, visit each other's houses on play dates;	To have someone to play with	To support; Make happy when upset	To have someone to play with	Companion to play with; Beyond disagreements; At different levels;
Friend: other friendship concepts	NA	Not dichotomous, at different levels	Dichotomous	NA	CH7	NA	"Friends are the best!" You need to play with a friend to know if they are good or bad	CH9	CH8	May get in conflict if someone says bad words but will get back together; Friendships NOT as dichotomous	Tell each other 'you're my best friend'	To protect; Inclusive; Abstract conceptualisation – symbols, hearts; We are friends because we play together	Inclusive – three best friends	At different levels; Friends can be annoying; Relative thinking – you disagree with everyone sometimes;
Friend: making friends strategies	NA	NA	Hard when you don't like their game	Easy; Introduce yourself; Ask if can play with them; Go to someone else if rejected	CH7	NA	Ask for help	CH9	CH8	Ask about name and birthday	Ask if they want to be your friend and play with them; if they say no, go to someone else	Ask to be someone's friend; Ask to play with someone; Difficult sometimes when CHF feels shy; Easier if 'a friend by my side'; Easy if the other child does not have a friend;	Easy, but hard if they are annoying	Start with a small activity; Do it regularly & more often; Become friends;
Friend: good friend	Kind and nice	Nice, not arguing	Cheeky (CHF describes self as cheeky too); Visited CHF house (not cwDLD)	Share toys & school items	CH7	NA	Fun; Nice; Visit house; Plays with you;	CH9	CH8	Kind & helpful; Comes to a birthday party	Funny, kind, caring; 'Plays with me'	Let's play their game; Let's choose the game; Listens to idea; Helps doing things CHF wants to do	Don't know	Caring; Accepting of other's preferences; Kind even if disagree
Friend: bad friend	Rude and mean	Nasty	Mean	Rude; Throwing things - physical	CH7	NA	Mean; Bully, throw away stuff, take your stuff;	CH9	CH8	Playing mean; Can physically hurt someone; Says bad words;	Playing naughty – fighting, rough play; Saying rude words; Not nice, scaring others	Make CHF to play their game; Will not let CHF join game; Not listening to ideas	Mean, does not let play; Boys swear	Playing rough games (boys); Annoying – have to get their own way;

	CwDLD language, communication and behaviours in class													
Language & communication	Almost non-verbal, poor articulation, non-verbal display of events	Rather quiet, takes time speaking, breaths heavily before speaking up.	Poor language but compensates with facial expression – smiles a lot, body language, voice intonation, loud speech	Poor pronunciation of more complex words; Poorer structure of longer sentences; Speaks fluently; Compensates with colloquial language	Outspoken; Sentence structure difficulties; Difficulties pronouncing more complex words; Does not understand some abstract words – argument but knows 'secret'	Little observable difficulties; Accent; Disconnected speech; Narrative speech confusing	Outspoken; Very few observable syntax and pronunciation mistakes;	Not observable difficulties; Some disconnected speech; Changes tone of voice	Outspoken; Pronunciation and syntax difficulties somewhat observable	Outspoken, mixing words, pronunciation difficulties; Corrects others when pronouncing my name incorrectly; Multi-lingual	Peers reject CH11 because of their limited understanding, CH11F attributes difficulties in communication to CH11's poor hearing (none)	Very little difficulties with language reflected in CH12's spelling; Writing difficulties confirmed by TA; Lisp most noticeable speech difficulty; Gives complex answers and describes stories	Speech difficulties can be observed as CH13 has difficulties with pronouncing - backing; Disconnected speech at times; Spelling difficult; Extended answers	Speech difficulties most noticeable, fronting; Difficulties with reading and writing;
Behaviours in classroom, playground	Goofing but inappropriate – L letter & dance before a peer, mustage in one-on-one Tired in class & one-on-one	Mostly plays with friends from Enhanced provision; Quiet in the class but raises hand when teacher asks open question	Energetic, runs a lot, acts silly in class	Well behaved in classroom unlike at home; Engaged with work; In playground plays either with one best friend or with a few peers if a friend is not around	Caring; Tells teacher if something is going on; Oversees children in year 1 of the special class	Wearing headphones at the begging of the day – quite time for self; Less interactive	During class seem disengaged at times; Engaged with children in play activities; Invited friends to birthday party; Telling teacher	Emotional; Gets upset easily; Likes spinning; Often tired	Lively; running a lot	Self-aware, idealised self – kind, School counsel; smart – correcting others Self-esteem – correcting me, speaking to the cameras, good at dance	Asking for permission to CH11F when playing Pretend play with CH11F (comedy show) and during one-on-one Distracted, spinning – sensorimotor - dances	Well-behaved; Follows the rules	Confident, first to raise hand when teacher asks for volunteers to perform in front of the class; Well-behaved; Follows the rules	Engaged in classroom; Presence in playground; Likes getting own way – can be perceived as bossy;
	Perceptions of friends													
Friend's communication with cwDLD	Peers have difficulties understanding	No difficulties, talking just like to anyone else.	Tries to understand, build up the meaning; Ignore comments, make up answers because feels like need to say something - connect	No difference	CH7	NA	NA	NA	NA	Understands cwDLD	NA	No perceived difficulties; neither with CH10 and CH11	No perceived difficulties	CwDLD does not understand words sometimes, makes CHF laugh; CwDLD may give up on fights because aware peers don't understand them; Reading together – CHF supports cwDLD with reading;
Friends like about cwDLD	CHF like that cwDLD is collaborative, needs to be shown	Nice, kind, generous; Helping peers with school work	Plays nicely	Plays games that friends like (sport); Shares toys, bike, trampoline;	CH7	"Nothing"	The way cwDLD looks at CHF; That they know games; Playing together	NA	NA	Let's others join	funny faces, funny dance, kind	Fun; Helpful; Working together; Caring and supporting when bullied	Nice; Lets CHF play with them, join cwDLD's games; Supportive; Caring	Nice when happy; Smiley

*Friends / *peers don't like about cwDLD*	CHF doesn't like that cwDLD does not listen to teacher, gets wound up by other peers teasing them and doesn't believe it was not CHF	* Other peers may not like cwDLD's jokes, misunderstand, cwDLD needs to explain	Running away from a friend	A bit greedy; Playing with other peers when a friend asks cwDLD to play;	CH7	"Nothing"	Scaring friends about snakes, jumping at them	NA	NA	NA	nothing	Takes over game; Spies on CHF; Whispering to other friend about CHF; Saying 'Stop following us'	Nothing specific	Not talking when disagree with other friends; Must have got their own way
Other perceptions of cwDLD by friends	NA	Likes making stuff, LEGO	Hard to play with sometimes when running away		CH7	NA	Skin colour; Height; Facial expression	NA	Follows CH5 and CH7	Perceived as bossy by CH12, CH12F	Physical appearance – hair colour, glasses; Know CH11 likes red and sparkles	Sit together in class; Knows likes and interests	NA	Should find friends matching their personality; Language as a barrier - fear of being teased & difficult to talk through conflicts; Saying things at wrong time
Friend's advice to make more friends	Listen more, don't get angry	Help peers out with work	Play more with friends	Play with each other	CH7	NA	Know a game	NA	Na	Ask about name and birthday, if don't understand a child's language, learn their language; Use book to understand if a child doesn't know English	Play with children more, even if they say no, hang around	Use sign language if difficulties speaking; When makes friend – make sure you can tell them your ideas.	NA	Find someone with compatible personality
CwDLD like about friends	NA	Play nice games	Plays with cwDLD	Nice; Knows Spanish – skills;	Don't know	NA	Hair; Kind; Lovely; Getting presents	Smart: Funny, crazy; Making funny voices	When CH7 plays with CH9	Makes me happy; Caring towards peers	CH11F as kind; Nice if play together	Listen to each other; Kind; Playing silly things; Doing silly dances; Helpful; Not giving up on each other; Play together	Let cwDLD join their games; Some friends do not sometimes – at different levels; Swearing	Blue eyes; Long hair; Likes playing; Nice; Sticks up for cwDLD
*CwDLD don't like about friends/ *peers*	NA	*Can be mean when playing	NA	Breaking games;	*Saying mean words; Speaking with a scary voice;	*Pushing	*Not saying kind things	*Being chased	When CH7 leaves - physical	NA	Don't like when they CH11F says no	When 2BFFs fight	NA (I like her very much)	Nothing; A different peer who is a council talks to teacher; Bossy
Other perceptions of friends by cwDLD	NA	NA	NA	Shared the language difficulties - friend does not understand English;	Physical appearance – skin colour	Through behaviours – hard to distinguish who is a peer; better in describing negative behaviours	Age; Hight	Asked to play with peers cwDLD don't like		Friends with another peer because know each other from pre-school	NA	Listen to each other; Don't make each other upset; Caring; Helping;	Being friends since year 1 – longevity;	Friends as protective; Likes – purple, Thursday, me (cwDLD), big tree in the garden

	Friendship experiences													
Friendship quality (intimacy / power)	Low, no secrets Let cwDLD choose a game, play their game	Low quality, no conflicts, general likings, low insights into friend; Not always made plays with friends; Can choose games	Low quality, no conflicts, general likings, low insights into friend Power balance – rock, paper, scissors; Low trust – cwDLD blames a friend in class; cwDLD runs away sometimes	Secrets about pretend games; Good insights about each other (next door neighbours); Conflicts regular but get together;	Secrets yes – good & bad; telling teacher if friend upset;	Low; CH6 leaves school before lunch – less opportunities to interact	Pretend play – secret, going behind cameras when recording play activity; Low abstract thinking; Low insights into friends; Medium quality	Low; No insights; No shared decisions on what to play; No secrets	Medium – even when CH9 went behind camera CH8 did not join them; Protective of each other; Power imbalance – CH8 didn't want to change the toy and CH9 went with that	High - Shared decisions over games; Secrets yes – birthdays, promises (CHF) BUT not allowed in school (CwDLD); Know interests & favourite colours, toys	High – secrets – yes; look out for each other; presents; Tell each other 'you're my best friend'; Walking home together; Know likes & interests	Secrets – yes; Telling each other – 'you're funny'; Conflicts yes but resolving; CHF sometimes embarrassed for CH12; Visiting houses – play dates; Power imbalance – CH12 takes over – source of conflicts, Promises	Secrets yes (swearing); Friends happy when cwDLD plays with them; CwDLD happy when a friend plays with them; CHF happy when happy together with cwDLD	Secrets, yes, every day, secret game; CHF know likes/interests; Play dates; Birthdays at home; Power balance – compromise, pretend play two families; CHF helping with reading/writing/language difficulties
Friend & peer interactions	Prefers playing with children than alone	Prosocial; May get into misunderstandings, explains it's a joke	Peers prefer sport to games cwDLD plays; Friend initiates plays; CwDLD shares with friend when being teased & friend tells teacher – protecting; Pretend play with a friend	CwDLD inclusive, plays with a friend and other peers too; Played with a new peer in class; Pretend play with peers	Pretend play with a friend; If a friend is out, plays with peers games they don't like; Pretend play with peers; Inclusive;	Inclusive; Doesn't play with peers who tell teacher and are mean; Low with a friend interactions – wearing headphones and having special arrangements	Hugging with a friend; Birthday party invite at home; Sings with a friend; Likes playing with peers	CwDLD call a friend a nube; CwDLD don't like when being chased by peers they don't like;	Helpful and prosocial; Tough, not emotional even when hurt by CH8 and tooth started moving; CH8 cried & took a 'time off'; Gives up space in line	Prosocial - Invites others to join games, plays with more peers, invites children to play dates, caring – checks upon children & tell; Give three chances before telling a peer off; Go to Gardening club together and with other friends; Dancing with friends, meet outside of school	Physical – walking home together, doing Math together, class seating; Prosocial - present for CH11F; Playing outside, doing art together with CH11F; Collaborates with CH11F on school work and in play; Staying on their own in yard	Pretend play with friends; CwDLD protective – tells teacher if peers chase their friend; CH12 and CH12F invite other peers to join their games	Friends – apologise when in conflict; Friends – play dates, 3 friends meet in CHF house	Teaming up - fighting along a friend; Always sitting next to each other; CwDLD might be afraid of peers teasing; CwDLD can hurt peers feelings – doesn't know how to communicate when upset
Peer and friend conflicts	Physical resolution – chasing peers when being teased Emotional – gets angry, wound up	Not with friends; Social misunderstandings with peers	Peers tickle & fight; Peers repeat cwDLD's talk; None with a friend;	Over not sharing toys with a friend; Playing with peers instead of a friend; Peers breaking friend's games	Peers saying mean words; Not stopping; Peers speaking with a scary voice;	Peer hitting others	No arguments; Physical pushing; Pulling hair	Friend – cwDLD not changing a toy during play activity but CH9 went along;	Apologise if bump into someone; Tell a TA/teacher if someone is mean; Mean is when pushing and have a long hair	Conflict resolved among children, if not, tell a teacher; Conflicts over a game but resolved with CH12	No conflicts among friends; With peers – tell teacher	Conflicts due to CH12 taking over games; CH12 Spying / whispering with another friend; All three BFFs teamed up against other peers;	CwDLD tells off friend;	Conflict with friends if another peer joined, CH14 and the peer have to have their own way; Peer is a counsel – tell on children; Language as a cause of peer conflicts with peers– cwDLD may not know WHEN to say things to people; Physical fight – cwDLD stood up for CHF, physical fight with the boys;

Uniqueness among other cases:	Poor language and communication, using gestures and pointing, e.g. as if 'don't know' Smart, sorting out Raven's Prosocial but difficult to interact with peers	Prosocial, initiates interaction in mainstream class; Helps others when finished with own work; Social cognition may be a problem – needs to be specific about joking	Physical – running away; momentary play; teasing & fighting conflicts; less abstract thinking – describes behaviours, names friends vs qualities; Very smiley, goofy in class Friend inclusive mindset – tries to understand; stays connected via meaningless speech; protective when peers teasing cwDLD; tries introducing new peers to their games	Compromising Inclusive of new peers Friends at home (neighbours) but not play together in school Behaves well in school not so much at home; Used to not behave in school when did not understand English; Polish peers as a support and gatekeepers Self-esteem, self-awareness	Presence in the classroom; False idealisation of self – counsel; Enquiring about the study plans; Shares family stories;	Spiritual, influenced by religion Less able to describe friends; only when strongly impacted by behaviour CH6 leaves school before lunch – less opportunities to interact Autistic like behaviours Understanding friendship distorted with the concepts from religions – all people are friends, but when describing, used physical interactions	CHF7 more relevant answers; abstract thinking than CH7 Autistic like behaviours Looks, own appearance	Confirmed autism diagnosis Competitive A novel quality appreciated in a friend - smart Sensorimotor – clumsiness, likes spinning	Can decide whether good or bad friend based on a haircut	Ideal self, presents as friend with many, but average status – perceived as bossy by CH12, CH12F Tells teacher; School rules followed Physical at a new level (+classroom seating) -Visiting houses, play dates, birthday parties Gardening clubs at school Often organised by CH10 mum Birthday are important for CH10F– making friend strategy; bad friend if does not invite Behaving well at school important – even to consider someone as good / bad friend	Friendship quality vs friendship quantity Approached CH11F to be friends Giving presents Autistic like behaviours Sensory motor – dance, spinning game is favourite one Self-aware – good at skills, art, dance, kind & loving people, will say yes to other's games; Good friend – says yes Self-esteem – self-praise, presents own art work in school, dances, except for their looks in glasses - weird Different to others – physical dimension, hair, glasses	Abstract conceptualisation of friendship – symbols, also by CH12F Approaching new children in class as a making friends strategy – be a gatekeeper? Less physical based perceptions, still some – seating Complex friendship of three BFFs but best quality – promises, conflicts but resolved, pretend play CH12 takes time out sometimes Family stories	Don't know good/bad friend & gives names– lack of abstract thinking/ reflection BUT relativeness in relationship – friends, break up, then together again Inclusiveness BUT three friends only, not other peers Rich experience – contrasting happy to tell off / sad not let play	CHF – concept of personalities; to be compatible to make friends CHF sorting conflicts, cwDLD gets into potentially because of speech difficulties CwDLD Not aware of difficulties with speech
Prominence of each Theme	⇨ Language & communication – low verbal, relying on non-verbal ⇨ Behaviours – inappropriate, over-reacting ⇨ Friends inclusive mindset – cwDLD to choose a game, instructed by teacher ⇨ CwDLD friendship understanding – physical dimension, dichotomous ⇨ Friendship quality - low, no secrets ⇨ Conflict – physical	⇨ Helping – to make friends, recognise a friend via behaviour ⇨ Kind, nice – personality ⇨ Social cognition – misunderstandings as a source of conflict with peers; cwDLD deals with by saying 'it's a joke' ⇨ Conflicts – once falls out with peers, hard to get together again for peers	⇨ Physical – tickling & fighting; repeating cwDLD's talk by peers; Physical looks describing friends; Running away from a friend sometimes ⇨ Friends as protective gatekeeper; inclusive mindset – tries to understand; makes attempts to connect via communication; pretend play ⇨ Less abstract thinking – describes behaviours, names friends vs qualities	⇨ Physical – different at home vs school; neighbours ⇨ Sharing toys ⇨ Pretend play – also very physical, shooting, killing ⇨ Language ⇨ of a new peer – shared difficulty ⇨ Polish friends first ⇨ Impact on behaviour in school	⇨ Physical – classroom seating; playing with peers if friend is out; describing a friend ⇨ Inclusive – no one outside of the circle; caring; protective; tells a teacher; plays with boys	⇨ Physical ⇨ Hitting; kicking; not listening; ⇨ Less able to describe friends; describes behaviour and uses examples; bad behaviour prevails	⇨ Physical ⇨ Hugging; Visiting houses – birthday party ⇨ Giving presents	⇨ Self-confidence ⇨ Thinks ahead and believes that know what is coming up ⇨ Physical ⇨ Less present; visited class peer's birthday party ⇨ Clumsy; sensitive	⇨ Prosocial – helping friends; offering own spot in a line; ⇨ Physical - happy when together; said when friend leaves; birthday party	⇨ CwDLD as prosocial – invites children to play, protective ⇨ CwDLD self-conceptualisation – ideal self but not true in some examples, self-esteem ⇨ Peer interactions – friendly, join games, caring ⇨ Conflicts – resolve among selves, if not, tell teacher ⇨ Behaviour in school – compliant, follows the rules, tells teacher	⇨ Exclusive friendship ⇨ Physical dimension – conceptualisation, playing together ⇨ Self-perception – self-esteem, good at things ⇨ Pretend play – together and on their own	⇨ Friendship not as dichotomous – complex, involves conflicts and reconciliation ⇨ Abstract conceptualisation ⇨ Prosocial – invites children to play; resolves conflicts; tells teacher; inclusive of other peers and BFFs to play together	Physical – working together; playing together; friends since year 1 Three BFFs	Complex relationships with CHF and another peer, similar to CH10 & CH12; One has to be deciding/biggest authority CH12 and CH14F Physical – remains (play dates, long hair, sitting next to each other) but moving onto focus on relationship

Cross-themes	Physical - Low verbal abilities compensated with behaviours that are not always appropriate or regulated (anger) Implications: reacting to conflicts non-physically, managing emotions, reactivity, listening to peers & trust Friendships: not dichotomous, friends vs acquaintances vs classmates, especially important in enhanced provision settings Stage 0 Friendship - Close friendship as momentary physical interaction	Social cognition – prosocial, helps, but may get into misunderstandings with peers, if 'just a joke' not good enough to be friends again for peers, peers can be nasty, don't want to be friends anymore Implications: must impact subjective wellbeing Friendships: not as dichotomous, friends vs acquaintances vs classmates, especially important in enhanced provision settings Stage 1 friendship – beyond momentary physical interaction, rather a one-way assistance	Physical – Physical descriptions & specific names Friend's inclusive mindset Friends quality vs quantity Less abstract thinking Stage 0 Friendship – momentary companionship during an activity, play; Friends as companions to play;	Physical Descriptive of behaviours Stage 2 Friendship - Close friendship a fair-weather cooperation; context specific	Physical Inclusive Stage 1 friendship – beyond momentary physical interaction, rather a one-way assistance	Physical Leaving early every day – not enough contact, especially during play time Describing friends qualities based on their behaviours Less able to describe friends qualities – bad behaviour mostly Autistic like behaviours Stage 0 Friendship – momentary companionship during an activity, play; Friends as companions to play; (bad friend – hitting, pushing)	Physical Low abstract thinking – autistic like traits Social cognition Lack of insights into a friend Stage 0 Friendship Close friendship as momentary physical interaction	Competitiveness Better at skills with a friend Completing Playmobil within time Stage 0 Friendship - Close friendship as momentary physical interaction	Physical Ganging up Relates to Special Class vs Mainstream children? Stage 0 Friendship - Close friendship as momentary physical interaction	Prosocial by CHF & ideal-self perceived as bossy/source of conflicts by CH12, CH12F Maturity – behaves according to rules, Self-esteem Physical – - Rude words, pushing - New level – let know whereabouts, play dates, birthday parties, Gardening clubs Stage 3 – friendship, over a period of time, conflicts temporary	Physical – play dates at homes, walk together to school, sit together Friends' inclusive mindset – aware of CH11 difficulties (with hearing - incorrect) Stage 3 – friendship, over a period of time, conflicts temporary	Physical – low but complex dynamics, includes jealousy, secrets, conflicts Language barriers not perceived, impacting despite evident lisp Stage 2 Friendship - Close friendship a fair-weather cooperation; context specific	Friendship purpose – to have someone to play with; gatekeepers; caring; support Physical dimension – play dates Inclusiveness – no differences in speech; let's CHF play Relativity / conflicts sorting out	CHF -physical aspects still present (long hair that's why friends; rough games – not a good friend) but move towards personality, relativeness Stage X friendship – making friends with someone with shared interests/likes the same game

Appendix R: Overview of studies

Study	Research objective	Research question(s)	Methods / analysis	Results
Chapter 4 Reviewing the link between language abilities and peer relations in children with Developmental Language Disorder: The importance of children's own perspectives	To identify participatory research approaches that have been used in previous studies about the peer relationships of children with DLD To learn how participatory approaches with children can inform our understanding of the links between the language development and peer interactions of children with DLD	1. To what extent have existing studies used participatory methods when researching the peer relations and friendships of children with DLD? 2. What examples of good practice in participatory research can be found in the research literature on DLD and peer relations? 3. What do the findings from studies directly including children with DLD highlight as important when considering links between language and peer relations?	Systematised literature review Narrative synthesis	Participatory approaches to studies about the peer relationships of children with DLD are limited Good practice demonstrated and includes visual support, art-based approaches, seeking assent from children Language social use and linguistic sophistication (quality) more important than the length or frequency of utterances (quantity) The subjective wellbeing and self-perceptions of children with DLD are key contributors to their peer relationships Active behaviours (quantity) linked with better peer acceptance of children with DLD
Chapter 5 Case studies	To understand the unique background, within-child characteristics and classroom context of the participating children with DLD To learn how the unique within-child factors manifest in the way participating children with DLD connect with others	1. What are the unique within-child characteristics of the participating children with DLD? 2. How do the unique within-child characteristics of the participating children with DLD manifest in their social interactions?	Observations Reflective notes Sociometric Interviews with children with DLD Interviews with friends Parent reports (background, CCC-2, SDQ) Teacher SDQ reports Language battery ToM battery Art-work Descriptive multiple-case study	Language quality in children with DLD less noticeable to a layperson and possibly peers Language quality may be misinterpreted as disinterest and disengagement Creative and playful children with DLD more accepted by peers Self-concept and self-esteem not always positively reflected in peer acceptance Traditional ToM tasks inconclusive of social cognition Perceived wellbeing difficult to elicit Prosocial behaviours (helping, caring, goofing) displayed by most participating children with DLD

Chapter 6 Friendship is…. *"when we all play together."* Exploring concepts of friendship formation in children with Developmental Language Disorder	To understand how children with DLD conceptualise friendships To learn how their friendship concepts align with the Selman's (1979) developmental model of social understanding	1. What concepts of friendship formation do children with DLD hold? 2. What do friendship formation concepts of children with DLD reveal about their levels of understanding of friendship motivation, mechanisms for making friends and what constitutes a good and a bad friend? 3. What strategies for making friends do children with DLD follow and propose?	Friendship formation interviews with children with DLD Thematic framework analysis Scoring and mapping responses to developmental stages as per the Selman's (1979) manual	Children with DLD conceptualise friendships through play and joined activities Physical proximity remains important to friendship formation even for children with DLD achieving higher developmental stages of social understanding Differences noted across and within children with DLD in the domains of motives and mechanisms to make friends, and distinguishing a good and a bad friend Children with DLD do not perceive language and communication as a barrier to making friends
Chapter 7 Children with Developmental Language Disorder as friends: The perspectives of their classroom peers	To comprehend the perspectives of peers on their friendship quality with children with DLD. To inform inclusive education and speech and language therapy practices supporting children with DLD	1. How do TD peers perceive children with DLD as friends? 2. Is the friendship quality between children with DLD and TD peers influenced by the language and communication difficulties of children with DLD? 3. What do peers of children with DLD suggest as strategies to help the latter group make more friend	Sociometric nomination methods Friendship quality interview with friends of children with DLD Thematic framework analysis	Children with DLD in Enhanced Provision less accepted than those attending full-time Mainstream settings Friends did not reported limited language of children with DLD as a barrier to their interactions Friends adjusted their communication if not understanding a child with DLD (Enhanced Provision) Friends demonstrated inclusive mindset and behaviours (inviting children with DLD to join games, introducing children with DLD to more peers as play partners)