# The Terminology Use and Diagnostic Approaches of Paediatric Speech and Language Therapists in the UK

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# Abstract

In recent years, the field of speech and language therapy has highly critiqued the existence of a vast number of diagnostic terms, all referring to paediatric language diagnoses. Substantive scholarly discussion has addressed the negative consequences of terminological inconsistency, including poor public awareness, underfunding of research and compromised lobbying efforts. Whilst many terms are used across research literature, there is no empirical evidence to show the diagnostic terminology used by speech and language therapists (SLTs) in clinical contexts. Although speculated, it is also unclear as to why variation may exist and persist, despite efforts to resolve it. The current study takes a mixed methods approach, supported by dialectical critical realism, to identify the terms used to denote speech, language and fluency diagnoses by SLTs in the UK. It also examines the underpinning reasons and investigates the clinical diagnostic process. A survey of SLTs (n=374) revealed which terms are commonly used in UK clinical practice. Associations between the use of terms and eight clinician-related factors (e.g. geographical location and workplace characteristics) were measured using chi-square testing. Semi-structured interviews sought the perspectives of 22 SLTs regarding their terminology use and diagnostic processes. The summation of both stages indicate that terminological consistency is a shared goal across the profession, but the nature of clinical practice poses substantial challenges to this. Interviewees reported taking an individualised approach to diagnosis with each client and adapting terms to meet the needs of families; however, this is not compatible with overall consistency. Participants disclosed barriers in their diagnostic practice such as limited clinical time, low public understanding of diagnostic terminology and the challenges of working with the highly varied needs of families. The confidence of SLTs to make diagnoses was generally low, resulting in alternative strategies to diagnosis being employed - such as the use of descriptions and colloquial terms. The impact and potential disparities associated with individualising terminology are considered and recommendations are made to support clinicians in their diagnostic practice.

# Abbreviations

| | |
|---|---|
| ASHA | American Speech Language Hearing Association |
| BCRP | Better Communication Research Project |
| BSA | British Stammering Association |
| BT | Basic Theme |
| CELF | Clinical Evaluation of Language Fundamentals |
| CEN | Clinical Excellence Network |
| CPD | Continuing Professional Development |
| CR | Critical Realism |
| DCR | Dialectical Critical Realism |
| DEAP | Diagnostic Evaluation of Articulation and Phonology |
| DF | Degrees of Freedom |
| DLD | Developmental Language Disorder |
| DSM | Diagnostic Statistical Manual |
| EHCP | Education Health Care Plan |
| GDPR | General Data Protection Regulation |
| GT | Global Theme |
| $H_0$ | Null hypothesis |
| HCPC | Health Care Professions Council |
| HEI | Higher Education Institution |
| IASLT | Irish Association of Speech and Language Therapists |
| IALP | International Association of Logopaedics and Phoniatrics |
| ICD | International Classification of Diseases |
| ICF | International Classification of Functioning |
| IJLCD | International Journal of Language and Communication Disorders |
| IQ | Intelligence Quotient |
| LA | Local Authority |
| MeSH | Medical Subject Headings |
| MMR | Mixed Methods Research |
| NHS | National Health Service |
| NIHR | National Institute of Health Research |
| NQP | Newly Qualified Practitioner |
| OT | Organising Theme |
| RADLD | Raising Awareness of Developmental Language Disorder |
| RALLI | Raising Awareness of Language Learning Impairment |
| RAPT | Renfrew Action Picture Test |
| RCSLT | Royal College of Speech and Language Therapists |
| SDCS | Speech Disorders Classification System |
| SES | Socioeconomic status |
| SLCN | Speech Language and Communication Needs |
| SLI | Specific Language Impairment |
| SLT | Speech and Language Therapist |
| SPSS | Statistical Product and Service Solutions |
| TNA | Thematic Network Analysis |
| WHO | World Health Organisation |

# Glossary

| | |
|---|---|
| Bonferroni correction | An adjustment of probability values performed to account for an increased risk of a type I error when conducting multiple statistical tests. |
| CATALISE project | A two phase project which took place in 2016 seeking to achieve consensus in defining language diagnoses. By employing a Delphi method, a set of statements were rated by a panel of experts. The publications on exercise suggested reasons for terminological disagreements and proposed standard definitions and nomenclature. |
| Categorical approach to diagnosis | A model which assumes that each diagnosis is a separate and distinct entity |
| Chi-squared test for independence | A statistical test that compares two variables in a contingency table to identify any relationship. |
| Classification system | A catalogue of specific and explicit criteria for making diagnoses. |
| Clinical judgement | The thought process of reasoning that allows healthcare workers to arrive at a conclusion based on objective and subjective information about a client. |
| Critical realism | A branch of philosophy that emerged from the writings of Roy Bhaskar which, crucially, distinguishes between the real world and the observable world. |
| Dialectical critical realism | A branch of critical realism with a focus on the interacting social powers (e.g. race, class, gender) that interact to produce observable social phenomena. |
| Dimensional approach to diagnosis | A model that views various diagnostic features across several continuums |
| Emergence | Emergent concepts have distinctive qualities, but are interdependent. |
| Fisher's exact test | A pairwise statistical test used to determine whether associations exist between two categorical variables. |
| Intervention | Action taken by healthcare professionals with the aim of improving client outcomes relating to the presenting condition. |
| MELD | A means of explaining the four stage critical realist analysis of social phenomena developed by Priscilla Alderson. The model consists of:<br>1 - Moment (observation), 2 – Edge (recognition of need) 3 – Level (understanding) and 4 – Dimension (social change). |
| Pearson's chi square test | A statistical test which examines the relationship between two variables. The observed frequencies are compared to the hypothetical values that would be expected if no relationship was present between the variables. The chi squared statistic indicates the magnitude of the difference between the variables, and the presence of a statistically significant relationship can be determined. |

| | |
|---|---|
| Phi/ Cramérs V | Coefficients to measure effect size of an association between two nominal variables. |
| RCSLT | The professional body for speech and language therapists in the UK. |
| Reflexivity | The examination of beliefs, judgments and practices and their potential influence on the research process. |
| Sequential explanatory design | Research comprised of a quantitative phase followed by a qualitative phase, which seeks to explain the quantitative results. |
| Speech and language therapist | A protected title in the UK for a sector of allied health professionals that provide treatment support and care for children and adults who have difficulties with communication, or with eating, drinking and swallowing. |
| Standardised assessment | Formal assessments that have been designed to measure aspects of a child's development which have been normed using data from large cohorts of children. |
| Type I error | The false rejection of a true null hypothesis. |
| Type II error | The acceptance of a false null hypothesis. |

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# CHAPTER 1: THESIS INTRODUCTION

## 1.1 Introduction

There is a wealth of literature to indicate that there are multiple diagnostic terms in existence to describe very similar clinical presentations within speech and language therapy, particularly concerning paediatric language-related diagnoses (e.g. Bishop, 2017; Kamhi, 2005; Leonard, 2020; Walsh, 2006). For example, “primary language impairment”, “specific language disorder”, and “developmental language needs” are all diagnostic terms to indicate that a child has significant difficulties with comprehension and/or production of language. Terminological inconsistency has been highlighted as problematic for clients, clinicians and researchers, for the purposes of sharing and locating information (Reilly et al., 2014b), raising public awareness (Bishop, 2014) and accessing financial support and provision (Walsh, 2005). Whilst there is a growing drive for clinicians and researchers to use consistent diagnostic terminology and criteria, many of the claims made about terminological consistency are based on anecdotal evidence and trends across the literature. Previous research has not specifically addressed (i) what terminology is used by speech and language therapists (SLTs) in clinical practice (ii) the underlying reasons for their use of terminology and (iii) how SLTs conduct diagnosis in practice. This study seeks to fill this gap and extend the investigation across terms used in clinical practice for primary speech, language and fluency diagnoses.

As part of working with paediatric clients, SLTs might follow stages of assessment through to intervention, and diagnosis may form a part of that process but is not mandatory (RCSLT, 2005). Clinicians have some flexibility in the diagnostic terms used with clients, and there are multiple classification systems in existence (explored in Chapter 2). Currently, there is limited research exploring the diagnostic approach of SLTs; whether they diagnose, the terms they use, how often they diagnose, and the motivating factors and challenges involved. This study aims to provide an original contribution to knowledge, by investigating these issues at the clinical level in the UK, using both qualitative and quantitative research methods. Mixed methods research (MMR) offers a means to explore social reality using the connections and contradictions between data, thus reducing the limitations of singular methods (Creswell and Plano Clark, 2017). Dialectical critical realism (DCR) is a metatheoretical position that can support researchers to identify generative mechanisms that underlie social phenomena and to understand components of complex social processes (Alderson, 2013; Bhaskar, 2008). DCR is employed in this study to inform the design and understand the evidence generated in relation to the terminology used by SLTs in clinical practice, the underlying reasons, and the approach to diagnosis. The ideologies of the MMR approach to research and DCR are complementary (Roberts, 2014), as will be discussed in Chapter 4. This study intends to provide insight into how SLTs make diagnoses in clinical practice and the issues that might contribute to wide-scale problems in terminological consistency.

## 1.2 Context for the Research: Speech and Language Therapists in the UK

SLTs work with a range of client groups across the lifespan to support communication, eating, drinking and swallowing. Speech and language therapy forms part of the allied health professions in the UK, which includes many branches of healthcare including drama therapy, occupational therapy, dietetics and orthotics. In the UK, to practice using the protected title "speech and language therapist" or, less commonly, "speech therapist", SLTs undertake mandatory preregistration training to a graduate-level (HCPC, 2018a). The profession, including training, is regulated by the Health Care Professions Council (HCPC) and supported by the professional body which, in the UK, is the Royal College of Speech and Language Therapists (RCSLT). Although it is not mandatory that SLTs are members of RCSLT, the organisation represents the profession in political issues and provides multiple resources including insurance to practice and clinical guidelines (e.g. Taylor-Goh, 2005). Several national bodies perform similar roles in other countries, such as the Irish Association of Speech and Language Therapists (IASLT) and the American Speech-Language and Hearing Association (ASHA).

Paediatric speech and language therapy is intended to meet the needs of a highly diverse group of clients (RCSLT, 2020b). According to RCSLT, clinical groups can be comprised of children in relation to the following areas: communication, language, speech, the autism spectrum, cleft palate and velopharyngeal abnormalities, clinical voice disorders, D/deafness and hearing loss, dysphagia, disorders of fluency and dysarthria (RCSLT, 2005). This study focuses on terminology and diagnosis in relation to developmental speech, language and fluency (of speech). The rationale for excluding other categories is that physiologically rooted diagnoses, or those associated with other medical aetiologies, are not predominantly the clinical responsibility of the SLT to diagnose (e.g. autism and D/deafness). Within the categories of speech, language and fluency, the study focuses on diagnoses where these are the primary need and therefore not attributable to other diagnoses, in order to focus on the diagnostic approach of SLTs. “Primary” in the context of speech, language and fluency diagnoses indicates that the area of need is not attributable to any other medical aetiology, such as syndromes or physiological disabilities (Schuele and Hadley, 1999).

As a profession, paediatric SLTs practice within various settings, including clinics, mainstream and specialist schools, and clients’ homes (RCSLT, 2020a). There are many employers of SLTs including the National Health Service (NHS), Local Authorities, and independent companies. The practice of SLTs varies, depending on caseloads, but could be expected to involve three stages: assessment, diagnosis, and a period of intervention (Duchan, 2019). Whilst some services and settings have protocols for this process, SLTs make many practice-based decisions using their knowledge, skills and clinical judgement (Taylor-Goh, 2005). There is some guidance provided by RCSLT, such as policy statements including recommendations for practice (e.g. RCSLT, 2011), but it is largely the role of universities and clinical supervisors to train SLTs to develop clinical judgement abilities.

## 1.3 Historical Roots of Diagnosis and Terminology Speech and Language Therapy

Summating the issues that influence diagnostic terminology in speech and language therapy, Walsh (2006) highlighted the significance of the philosophical stance within the training and practice of SLTs in the approach to making diagnoses. The teaching of concepts and terms is rooted within historical paradigms and shapes professional identity and subsequent practice. Kjaer (2005) suggests that the terminology adopted by SLTs reflects their individual positionality and understanding of the profession, and it is therefore useful to appreciate its historical foundations. The conventions of modern speech and language therapy can be traced back to the 20th century (Leahy and Supple, 2002; Stansfield, 2020). Internationally, SLTs have been represented by the International Association of Logopaedics and Phoniatrics (IALP) since 1924. At this time in the UK, SLTs mainly practised independently and were categorised either as medical, dealing with elements of speech and language caused by illness, or arts-based and concerned mostly with the elocution of speech sounds (Duchan, 2006). The two groups were, respectively, represented by two distinct professional bodies: the British Society of Speech Therapists; founded in 1935, and The British Association of Teachers of Speech and Drama, founded in 1934. Following the influx of clients with neurological trauma as a result of the Second World War and the need for rehabilitation services, the two bodies amalgamated to form one united profession (Supple and Söderpalm, 2010) and the singular College of Speech Therapists was established in 1944. This body continued to evolve and is recognised today as the Royal College of Speech and Language Therapists (RCSLT), having attained royal status in 1995.

Rockey (1969) commented on how differences in paradigms in the arts and sciences impact terminology usage, particularly divided by the "art" of therapy and the "science" of research. Sonninen and Damsté (1971) suggested that terms did not require precise definitions in the arts field, but instead performed a social function so that concepts could be shared effectively with clients. This contrasts with the priority within the scientific community of producing accurate and replicable outcomes, with a need for terminology to facilitate unambiguous communication. Differing purposes of terminology within the profession is an issue that has been critically evaluated as a potential source of terminological inconsistency (Kamhi, 2005; Walsh, 2005). Beyond the research and practice divide, there are further areas of disunity within the profession that may also be relevant.

In the first half of the 20th century, the role of the SLT remained predominantly in medical rehabilitation, with education facilities increasingly employing clinicians to support children with learning disabilities (Duchan, 2006). During the 1960s, a group of individuals within the international group IALP challenged the extent of influence of the medical profession, and in response established a "Schools Committee" to emphasise the need for SLTs in educational settings. Currently, paediatric speech and language therapy services are primarily funded through health budgets, but the majority (70%) of services are provided within the education sector (Duchan, 2006). Unifying the profession across health and education fields has produced some discordance. Diagnosis is an important part of the practice of medicine, and by association, speech and language therapy (Duchan and Kovarsky, 2005), but it is not without controversy. Its application to learning needs has received significant criticism within education fields (Lauchlan and Boyle, 2007).

Duchan (2019) highlights that diagnosis has been integral to the role of SLTs since the profession was established, forming an essential cornerstone of modern practice. Diagnostic categories permeate textbooks, learning modules, clinical care pathways, and link client groups with intervention strategies. Diagnoses serve as a prognostic indicator, explanation of causality, and a simple classification system. Duchan (2019) suggests that two key perspective shifts have had an impact on both diagnosis and terminology in speech and language therapy. In the 1950s, there was an expansion of the way that diagnostic categories were conceptualised, moving towards a dimensional approach. Compared to the use of categories of diagnosis, this approach is more descriptive and encompasses an individual's wide-ranging needs. Subsequently, increased awareness of the negative impacts of diagnosis, particularly within education, resulted in the rise of the social model of disability, moving the focus from individual impairment to environmental barriers (Oliver and Sapey, 1983). According to Duchan (2019), this encouraged researchers and clinicians in the field to question the use of diagnosis in speech and language therapy, with diagnoses becoming increasingly descriptive and less impairment driven.

Terminological debates have not been confined to diagnosis; the name of the profession was widely debated in the UK, being changed from “speech therapy”, to become “speech and language therapy” in 1990 (Patterson, 2005). Contention around the name initiated in 1973 when clinicians voted for change, but a poll in 1974 revealed vastly diverse opinions to a preferred option. A second attempt in 1979 was also inconclusive. Professor David Crystal, responsible for founding and developing several key materials in UK speech and language therapy, commented on the issue in *Bulletin*, the professional magazine produced by RCSLT. Crystal (1973) considered that no title could be comprehensively accurate and immediately intelligible, but that it is sensible to aim for the least misleading. Crystal (1982) later commented that anxieties over terminology for clinical entities and the name of the profession were becoming "routine space-fillers" in newsletters and academic journals, with the absence of a solution. Divergence in diagnostic terminology across case notes, creating confusion within and across disciplines, was considered to be of detriment to clients. It is apparent, therefore, that terminology usage has been a longstanding source of scrutiny and problems across the profession. Several handbooks and dictionaries have been devised in an attempt to unify the profession’s use of terms (e.g. Morris, 1988; Robbins, 1963; Stinchfield and Robbins, 1931), and yet, there is a clear indication that the issue persists within the profession, suggesting that issues are more deeply rooted than developing a source of common definitions.

## 1.4 Identification of the Research Problem

There has been significant focus in paediatric speech and language therapy research on the terminology used for diagnosis, which has resulted in the publication of numerous discursive articles in journals internationally (e.g. Bishop, 2017; Leonard, 2020; Paul, 2020; Walsh, 2005). With some irony, it should be noted that across literature, the phenomenon of terminological inconsistency is defined in two ways: the use of the same term with multiple definitions, and multiple terms used with the same definition. It has been widely recognised that both scenarios are problematic to the profession, and in recent years there has been considerable focus on the existence of numerous terms to denote primary language diagnoses. Two scholarly reviewed international journals in the field, the *International Journal of Language and Communication* Disorders (IJLCD) and *Perspectives of the ASHA Special Interest Groups*, both dedicated special issues to how terminology for language diagnoses is applied in research and the practice of SLTs (Ebbels, 2014; Leonard, 2020). Consequential to terminological inconsistency, Leonard (1998 p. 8) described the clients of SLTs as invisible, "overlooked because of the excessive number of terms that have been employed", and argued that as a result, children were not represented clearly in broad government service planning, population-level data collection, or political decision making. This view has permeated the concerns of the field (Kamhi, 2004; Walsh, 2005), resulting in calls for a joined-up approach to diagnosis across research and clinical practice.

In 2014, a UK based research drive entitled *the CATALISE project* (Bishop et al., 2016; 2017) was devised, in an attempt to achieve international consensus for terminology and criteria for primary language diagnoses. Using a Delphi method, a consortium of experts in the field rated agreement with relevant statements, with the intended outcome of producing consistent recommendations for clinicians, researchers and third party organisations internationally. This generated mixed reactions and academic discussion, but the resultant impact on clinical terminology use has not been measured. The lack of empirical evidence to show what terminology was being used in UK clinical practice prior to 2016 renders it challenging to appraise the success of the CATALISE project in reducing terminological variation. It is difficult to move to resolve the problems of complex social issues - such as diagnostic practice - without knowledge of current approaches and an understanding of causes (Alderson, 2013).

## 1.5 Motivation for the Research

The motivation for researching diagnosis and terminology in speech and language therapy was triggered by extensive discussion of the importance of terminological consistency within paediatric speech and language therapy, and the prolific debate regarding the negative impacts of diagnosis for clients, rendering the issue highly contentious. Significant changes have taken place in relation to language diagnoses in efforts to unify the field to use consistent terminology and diagnostic criteria. The need for terminological consistency has been stressed by Kamhi (2004 p. 111):

> “*Unfortunately science, truth and logic have little impact on our professional identity […] and how the nonprofessional community views our scope of practice and expertise.*”

Walsh (2005 p. 66) extended this criticism, stating the impact that a lack of consistency at the professional level has on public affairs:

> “*Due to their preference for complex and exhaustively accurate terms, speech pathologists have been unable to agree on consistent and simple terms for public communication*”

There is an assumption expressed by many who are invested in achieving terminological consistency in the field of speech and language therapy, that establishing consensus will remediate the problems incurred by the existence of multiple terms (e.g. Walsh, 2005). This would also improve outcomes for clinicians, researchers and children at individual, local, and national levels, with information more easily shared and located, improved communication between services, and proliferated awareness and understanding of diagnoses in the public eye (Bishop, 2014). It is evident that the current situation regarding diagnostic terminology has caused considerable concern, particularly in relation to the impact on clients. Proposed solutions do not appear to have remediated the problem for language diagnoses. In 2020, replies from SLTs to a tweet published on Twitter by NAPLIC, a UK based organisation for language disorders (NAPLIC, 2020), indicated that low confidence and uncertainty about criteria persist in clinical practice:

> *"I did a survey of our local SLTs in Oct and there was still a lack of confidence diagnosing DLD, those who had been more of an active role in CATALISE meetings were more so. Also a lack of confidence in interventions for this population." (Bamblett, 2020).*
>
> *"I've seen 3 older children with DLD in the past week, which is referred to between the lines but not diagnosed. We need more confidence as professionals across the board" (Hill, 2020).*

There are important areas of evidence that are absent from the debate, and whilst there has been substantial academic discussion, little is known about what terms are used by SLTs in practice. In addition, there is a dearth of literature examining the socially rooted issues around diagnosis in clinical practice. Compared to language, there has been considerably less focus on the terminology used for speech or fluency, yet informal anecdotes from clinical colleagues suggest that similar terminological issues may exist. This study seeks to contribute empirical evidence of what terms are used in clinical diagnosis, and identifying factors related to the diagnostic practice of SLTs. Through insight into clinical diagnostic processes, the research aims to provide a clearer understanding of the barriers to terminological consistency.

## 1.6 Aims, Scope and Design of the Research

This research aims to develop a novel understanding of the factors that are influential to the terminology use and diagnostic approach of paediatric speech and language therapists in relation to primary speech, language and fluency diagnoses. To achieve this aim, the following research questions were devised:

1. What terminology is used by paediatric SLTs in the UK to denote primary speech, language and fluency diagnoses?
2. What factors underpin the diagnostic terminology used by paediatric SLTs in the UK?
3. How do paediatric SLTs approach making diagnoses in practice?

To address the research questions, a sequential explanatory mixed methods design was employed. A survey was designed, and descriptive and inferential statistical methods were applied to the data generated to answer questions 1 and 2. To further explore question 2 and answer question 3, semi-structured interviews were conducted and analysed thematically. The process was informed by Dialectical Critical Realism (DCR), a metatheoretical lens that will be fully discussed in Chapter 4.

## 1.7 Thesis Outline

The thesis reports the findings of a two-phase mixed method research project exploring the terminology use and diagnostic approach of paediatric SLTs in the UK, in relation to speech, language and fluency. The structure of the thesis is as follows:

**Chapter 1 – Introduction and Background:** The current chapter outlines some essential background concepts to frame the current study and describe the adjunct problems which cultivated the need for research.

**Chapter 2 – Literature Review (Terminology):** The literature review is bifurcated by the emergent concepts of the terminology used for diagnostic purposes, and the act of diagnosis itself. This chapter presents a historical overview of the development of diagnostic classification systems and terminology for paediatric speech, language and fluency.

**Chapter 3 – Literature Review (Diagnostic Approach of SLTs)**: As the second branch of the literature review, Chapter 3 encompasses issues pertaining to the diagnostic approach of SLTs including a discussion of current guidance, workplace constraints, and social stigma.

**Chapter 4 - Methodology:** This chapter outlines the theoretical underpinnings of dialectical critical realism which informed the methodological approach taken. The application of mixed methods research and the rationale for using a sequential explanatory design is outlined. Details are provided for the design and analysis of the methods employed: a survey followed by semi-structured interviews.

**Chapter 5 – Quantitative Results:** Results of the statistical analysis of data from the survey, which generated responses from 374 SLTs in the UK, are presented.

**Chapter 6 – Qualitative Results:** This chapter shows the application of Thematic Network Analysis to the data accrued from 22 interviews, with a focus on relationships between clusters of themes. Direct quotes from interviews, summary tables and diagrams are used to illustrate the results.

**Chapter 7 – Discussion**: The research questions are fully addressed in this chapter, via copious discussion and critical appraisal of the evidence yielded by the survey and interviews in relation to existing literature.

**Chapter 8 – Conclusion and Reflections:** The thesis is concluded with the presentation of two typological models that describe the findings of the current study in the context of speech and language therapy practice in the UK. Implications for practice and directions for future research are proposed. The limitations of the current work are reviewed.

# CHAPTER 2: CLASSIFICATION AND TERMINOLOGY FOR PRIMARY SPEECH, LANGUAGE AND FLUENCY DIAGNOSES

This chapter presents a thematic review and critical appraisal of salient issues pertaining to diagnostic terminology, beginning with a historical overview of the terminology used for paediatric speech, language and fluency diagnoses, and the development of classification systems. A systematic method was used to initially search for literature to demonstrate what is currently known about clinical and research application of diagnostic terminology, and how diagnosis is approached in speech and language therapy. The systematic method was employed to capture evidence from the extant literature and studies from cognate fields of research have been incorporated into the review to provide a wider overview and context. The review is split over two chapters; the current chapter focuses on terminology and classification, whilst Chapter 3 will present issues relating to the diagnostic approach of SLTs. Key issues related to the consistency of terminology usage in paediatric speech and language therapy clinical practice and research, are critically discussed, including proposed causes of inconsistency. The review highlights areas of knowledge that are missing from current literature in this area which contributed to the development of the current research.

## 2.1 Review Strategy

The aim of this review is to gain a comprehensive understanding of the current literature relating to diagnosis and terminology usage in paediatric speech and language therapy, and identify literature gaps to address the question:

> *What is currently known about diagnostic terminology and diagnostic approaches in paediatric speech and language therapy?*

A systematic means of searching was used to identify directly relevant literature stored across online databases, using a Boolean logic search strategy. This incorporated medical subject headings (MeSH) and text words relating to diagnosis and terminology usage in paediatric speech and language therapy:

*diagnos* AND (diagnostic term*) AND (speech therap* OR speech patholog* OR speech language pathology* OR speech language therap* OR speech and language therap* OR speech and language patholog*) AND (paediatric OR pediatric OR child*).*

The search included databases across health, psychology and education because of the cross-disciplinary nature of speech and language therapy. Although the current study focuses on UK based practice, the literature search was not restricted geographically to attain an international overview of the available evidence. Dates were also not restricted in order to provide historical context for the current issues. No limitations were placed on types of article or study.

*Inclusion criteria*: Any literature relating to diagnosis or terminology in speech and language therapy published in English

*Exclusion criteria*: Articles not related to the review question or with no English translation available

## 2.2 Results

The search was conducted on 14th January 2018 and produced 696 records in total, from which 128 duplicates were removed, leaving 568 records to be screened by title. A notification alert was placed on the search so that any new and relevant publications could be incorporated into the review. Since 2018, 4 articles from search alerts met criteria and were deemed appropriate for inclusion in the review.

Table 2-1 shows the number of records returned per database:

| **Database** | **Number of records returned** |
|---|---|
| MEDLINE | 261 |
| PsycINFO | 185 |
| CINAHL Complete | 119 |
| ERIC | 51 |
| Education Abstracts (H.W. Wilson) | 39 |
| AMED - The Allied and Complementary Medicine Database | 17 |
| Child Development & Adolescent Studies | 16 |
| British Education Index | 7 |
| Educational Administration Abstracts | 1 |
| **TOTAL** | **696** |

*Table 2-1 Systematic search returns by database*

Records were first screened by title against the eligibility criteria, resulting in the exclusion of 306 titles. Abstracts were sourced for the remaining 262 and read to determine which met the criteria. In total, 93 full records were then retrieved. Of the 93, 82 met criteria and the reference list of each article was also screened for titles that appeared to meet eligibility criteria. The full screening process was repeated for each title, and records were excluded at abstract or full record if they did not meet the criteria. Reference lists were screened of each new study meeting criteria until no new material was identified. Throughout the process, articles were incorporated from subsequent searches to provide context, evidence and alternative perspectives from cognate disciplines such as paediatric disability, education and psychology. A cumulative total of records sourced after the initial search is shown as the right arm of Figure 2-1. Once all articles had been retrieved, issues pertaining to the aim of the review were extracted and organised thematically.

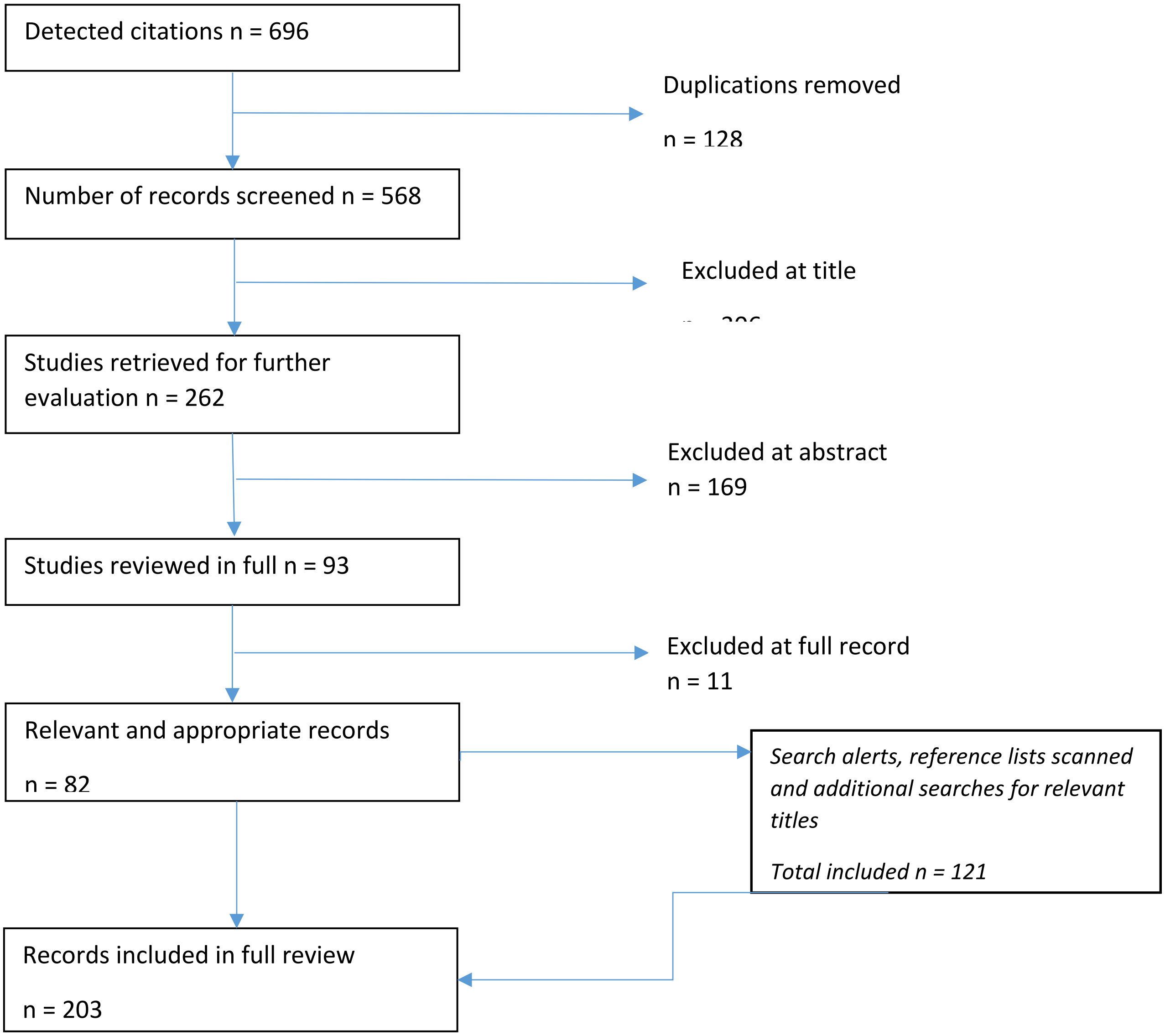

*Figure 2-1 Search strategy for literature review on terminology and diagnostic approach of SLTs*

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## 2.3 Review Outcomes

Of the records that matched the eligibility criteria, most were articles published in peer-reviewed journals and included commentaries, editorials and theoretical summaries. Many were not studies producing empirical evidence but presented arguments and commentaries related to diagnostic concepts within speech and language therapy. Of the 82 records identified for inclusion by the initial search strategy, only 19 contributed original empirical research. Relevant evidence was drawn from cognate fields such as paediatric disability and psychology but was limited by the extent of shared features across domains. Several issues that authors speculated to contribute to diagnostic variation related to issues inherent in paediatric speech and language therapy, for example, the discordant enmeshment of health and education philosophies informing research and practice. At times, the absence of directly relevant empirical studies rendered it challenging to draw conclusions within the narrative of the review, as the strength of evidence could not be used as a metric to compare studies. It was apparent from reviewing the literature that diagnosis and terminology are interdependent yet distinct concepts, and therefore the themes generated by the review have been separated over two chapters. The current chapter discusses terminological and classification issues in speech and language therapy, and diagnostic approaches will be reviewed in Chapter 3.

### 2.3.1 History of Terminology and Classification Systems

The use of terminology is intrinsically linked with theoretical developments to classifying diagnoses and prevailing conceptualisation of disability over time. Evolving theories of causation and corresponding shifts in approaches to intervention have shaped the use of terms. Whilst there are globally recognised classification systems, more specific taxonomies often exist within each health field. Early documentation of classification systems for speech, language and fluency diagnoses dates back to the 19th century, and different terms have emerged from theoretical developments. The review will commence with a discussion of the historical context of terminology and classification, which is suggestive of the current state of variation.

#### 2.3.1.1 Speech Terminology and Classification

It is widely accepted that the population of children who receive primary speech-related diagnoses display a highly heterogeneous collection of diagnostic features (Raitano et al., 2004). Subtyping is a means of classification that clusters similar characteristics, thus supporting the development of targeted assessment and intervention tools (Waring and Knight, 2013). Internationally, there have been several theoretical approaches and developments to categorising subtypes within primary speech diagnoses. One of the earliest recorded classification systems for speech was developed in response to wide terminological variation (Potter, 1882). Terms in circulation included: aphasia, dysarthria, dysarthria literalis, dysarthria syllabaris, dyslalia, dyslalia dentalis, dyslalia lingualis, rhotacism and stigmatism. Many of these terms were used to describe the same characteristics, and some terms had wide-ranging definitions. Recognising this as a problem, Potter (1882) introduced two new terms to classify developmental speech diagnoses: paralalia and alalia, with accompanying definitions:

> Paralalia: difficulties in speaking attributed to muscular defects or disturbed transmission of nervous impulses caused by physiological features, local dialect, carelessness or eagerness in speaking.
>
> Alalia: unintelligibly consequential to cognitive processes, with defining features such as tremors in the frontal oral articulators, facial spasms, difficulty initiating syllables, and nasal enunciation.

The definitions and associated interventions for paralalia and alalia reflected a dually linguistic and physiological understanding of speech. Treatment recommendations included “regularly exercising the offending sounds by reading aloud” (paralalia) and “careful speech-training” (alalia) (Potter, 1882, p. 35). However, this reconfiguration of the definitions of diagnoses was unsuccessful in resolving terminological inconsistency, and challenges with classification persisted throughout the 20th century.

This is highlighted in a commentary on the terminology used during the 1950s, in which Ingram (1959 p. 445) described the definitions of paediatric language diagnoses as “somewhat arbitrary and crude”.

Sun and Wallach (2014) speculated that an increase in the number of terms in clinical practice is a consequence of subtyping in research which reduces consistency. There continues to exist multiple subtyping systems for speech sound disorder (SSD), intended for application in research and clinical practice, each with unique criteria and terminology. Waring and Knight (2013) compared three internationally recognised approaches to defining SSD: The Psycholinguistic Assessment of Developmental Speech Disorders (Stackhouse and Wells, 1997), Differential Diagnosis of Speech Sound Disorder (Dodd, 2013), and the Speech Disorders Classification System (SDCS) (Shriberg et al., 1997). Each has a slightly different purpose, which is a natural product of a developing evidence base, but the introduction of more terms arguably increases variation. The Psycholinguistic Assessment of Developmental Speech Disorders (Stackhouse and Wells, 1997) refers to "speech disorder" as a broad diagnostic category, and emphasises the limitations of the medical model. Terminology is provided for describing characteristics of speech, but identifying subtypes is not considered a clinical priority. The Differential Diagnosis for Speech Sound Disorder presented by Dodd (2013), also takes a clinical focus but makes the case for defining SSD using five aetiologically based subtypes, to improve targeted assessment and intervention. The SDCS is a research-orientated framework, emphasising the identification of genetic variation, and SSD is classified into seven potential causes. There are no shared terms between the three systems, but core similarities can be identified in the subgroups presented: (1) an articulation based group; (2) a motor planning/programming group; and (3) a phonological group (Waring and Knight, 2013). This indicates how competing theories of subtyping has contributed to the number of terms in use; arguably unnecessarily, given the extent of overlap. This suggests that inconsistency may be consequential to, or at least perpetuated by, a weak and competing theoretical basis to conceptualise diagnoses.

A recent drive to establish an aetiological classification system for SSD has resulted in continuous introduction of terminology to indicate subtypes. Wren et al. (2012) categorised SSD as “persistent speech disorder” and “speech errors below threshold”, whilst Lewis (2011) used the terms “common clinical distortions”, “SSD with language impairment” and “childhood apraxia of speech”. Despite the increase in terminology, pursuing the identification of distinct subtypes may contribute to the development of an evidence base that can support clinical diagnostic procedures (Grigos, 2016). However, one of the main counterarguments to the extent that this actually holds benefits for practice, is the required time involved in clinical assessment procedures for subtypes (Betz et al., 2013; Dollaghan, 2004b). Practical barriers, such as limited time with clients, may influence clinical diagnostic practice (Flatley et al., 2014). Consequently, it has been suggested that terms which are clinically useful - such as severity rankings - are more likely to be used by practising SLTs (Lewis et al., 2011). Whilst this might suggest that the terms used for subtyping in research are unlikely to permeate into clinical settings, it also indicates a divergence between research aims and the reality of practice. This may in itself perpetuate the extent of variation. However, there is currently minimal empirical evidence that shows the clinical use of speech terminology by SLTs in the UK, rendering it challenging to draw conclusions about the consistency of its application.

#### *2.3.1.2 Language Terminology and Classification*

Leonard (2020) and Reilly et al. (2014a) have documented the evolution in terminology for primary paediatric language diagnoses, which have typically reflected theoretical developments. A French translation indicates that Gall (1835) used the term “congenital aphasia” in an initial description of children with “specific problems with language in the absence of other conditions”, whilst the contemporary German term was “hearing mutism” (Leonard, 2020). In the early 20th century, terms such as “developmental aphasia” and “infantile aphasia” were popular, reflecting the medical emphasis within the profession (Duchan, 2006). A surge in evidence for typical and atypical language development contributed several terms to the research lexicon, including: “congenital aphasia” (Vaisse, 1866), “word deafness” (McCall, 1911), and “congenital verbal auditory agnosia” (Karlin, 1954). As the distinction between understanding and expression of language became established “receptive developmental aphasia” and “receptive-expressive developmental aphasia” were introduced to reflect this development. Similarly, when the focus shifted from neurological research to theories rooted in linguistic processing styles, the term aphasia was superseded by the appearance of dysphasia. Popular terms used in research have included “deviant language” (Leonard, 1972), “language disorder” (Rees, 1973), “delayed language” (Weiner, 1974), “developmental language disorder” (Aram and Nation, 1975), and “specific language impairment” (Leonard, 1981). During the same period, scholars with an educational orientation employed terms such as “language-learning disability” (Richman, 1983) or “language disability” (Crystal, 1987). Leonard (2020) suggested that rapid theoretical evolution and ranging perspectives have contributed to terminological inconsistency. Whilst this indicates the wide variety in the terminology used across studies, it is not clear how these terms were applied beyond research contexts.

It was suggested that terminology for speech diversified as a result of attempts to subtype broad categories of speech diagnoses, and subtyping has also been prevalent in the development of conceptualising language diagnoses. In recognition of the extent of the inconsistency of classification systems across research, Korkman and Hakkinenrihu (1994) aimed to establish a novel system to subtype language diagnoses using assessment results from a sample of 80 children to identify data-driven subtypes. Table 2-2 shows the terms included in popular systems and research studies of the time, in addition to the terms proposed by Korkman and Hakkinenrihu (1994):

| **DSM III-R** | **ICD-10** | **Rapin and Allen, 1988** | **Wilson and Riscussi, 1986** | **Aram and Nation, 1975** | **Korkman and Hakkinenrihu (1994)** |
|---|---|---|---|---|---|
| | | | **Expressive language** | | |
| Developmental expressive language disorder | Expressive language disorder | Verbal dyspraxia | Expressive disorder | Nonspecific formulation-repetition deficit | |
| | | | **Receptive Language** | | |
| Developmental receptive language disorder | Receptive language disorder | Verbal auditory agnosia | Auditory semantic comprehension disorder | Comprehension deficit | Specific comprehension |
| | | | Expressive and/or receptive disorder | Phonologic comprehension-formulation-repetition deficit | |
| | | | Auditory and visual semantic comprehension disorder | | |
| | | | **Other** | | |
| | | Lexical-syntactic deficit syndrome | Auditory semantic comprehension and visual short term memory disorder | Formulation, repetition deficit | Specific dyspraxic |
| | | Phonological programming deficit syndrome | Auditory memory and retrieval disorder | | Specific dysnomia |
| | | Phonologic-syntactic deficit syndrome | | | |
| | | Semantic-pragmatic deficit syndrome | | | |

*Table 2-2: Diagnostic terminology featured in classification systems reviewed by Korkman and Hakkinenrihu (1994)*

Despite inclusion in all previous classification systems, and evidence for its validity, an “expressive language” group was not identified as a discrete subtype in the data, and was therefore excluded. Not only does this highlight a lack of cohesion, but also indicates the problems associated with deriving conclusions about classification from a single study. Korkman and Hakkinenrihu (1994) also proposed the introduction of the novel terms “global”, “specific dyspraxic”, “specific comprehension”, and “specific dysnomia” to reflect their data. A Google Scholar search with no date restrictions conducted in 2020 returned less than 150 results for each of these terms when paired with "language disorder", indicating limited uptake. This suggests that the introduction of new terms may not be wholly responsible for variation but, as with speech diagnoses, variation may be linked to a weak theoretical understanding of diagnostic categories.

Evidently, terminology for language diagnoses has varied considerably throughout research over time which reflects theoretical developments. There is some evidence that showed the clinical terminology use of SLTs in Scotland attending a Clinical Excellence Network (CEN) for Specific Language Impairment. Clark et al. (2013) took a survey of 108 CEN members which comprised 96 SLTs, three specialist SLTs, two SLT support workers, three teachers, one teaching assistant, two headteachers and a parent. This was reported in the professional magazine, *Bulletin* in September 2013 as part of a series that was examining terminological consistency for language diagnoses. No detail was provided about the specific methods used, and the data did not appear in a peer-reviewed article. However, descriptive statistics are suggestive of terminology use, if interpreted tentatively. Specific language impairment was the most popular term used by 88% of respondents, which reflects the name of the CEN. Respondents reportedly used up to 10 other terms, although the article does not clarify whether this figure is per respondent or across the whole sample. The results shared in the *Bulletin* article are replicated in Table 2-3:

| **Terminology** | **% of sample using the term** |
|---|---|
| Specific language impairment | 85 |
| Language disorder | 47 |
| Language delay | 27 |
| Specific language disorder | 20 |
| Primary language impairment | 11 |
| Other (language impairment, expressive language disorder/ delay/ difficulty) | 7 |
| Specific speech and language impairment | 6 |
| Significant language impairment | 5 |

*Table 2-3 Replication of results reported in Bulletin from Clark et al. (2013)*

RCSLT (2017d) also indicated that the term “specific language impairment” (SLI) was heavily embedded across UK service providers and Reilly et al. (2014b) stated that the term was widely used in research. In 2017 the term used by RCSLT changed from SLI to “developmental language disorder” (DLD) (RCSLT, 2017b; 2018b), reflecting a further attempt to resolve the extent of variation (Bishop et al., 2017). There is also no available evidence to show the extent of uptake of DLD in current clinical practice. This shift in terminology was significant in the UK and will be reviewed further in Section 2.3.3.

#### *2.3.1.3 Fluency Terminology and Classification*

Potter (1882) reported multiple terms used synonymously for fluency diagnoses, such as: difficult speech, impeded speech, mogilalia, lallomania, balbuties, psellisra, bégaiement, stammering and stuttering. Potter (1882) reported that, as diagnostic terms, stuttering and stammering were sometimes used interchangeably. The term “stuttering” was also applied as both a broad diagnostic term and as a subtype that specifically referred to involuntary spasms of speech articulators. In an attempt to improve consistency, Potter (1882) introduced “dyslalia” as a replacement term for the broad diagnosis, and stuttering was retained as a subtype, alongside stammering and spasmodic hesitation:

- Stuttering: clonic (uncontrolled, random) spasm of the articulators, resulting in repetition of one sound prior to accessing the sequence of movements necessary for the production of the next.
- Stammering: tonic (rigid) spasm of articulators resulting in perseveration
- Spasmodic hesitation: disturbance of the respiratory system, characterised by a choking sensation.

Unlike very early classification of speech and language, fluency terminology has remained relatively stable, with the terms stuttering and stammering retained in research. Multiple theories of causation have been proposed, with perspectives from neurophysiology, linguistic planning and psychoneurosis (e.g. Howell, 2011; Ingham, 2012; Ingram, 1959; Van Riper, 1996). Across theories, the term “stutter” is used heavily in research, whether the cause is considered to be psychological (e.g. Greiner et al., 1986; Miller and Watson, 1992; Sermas and Cox, 1982; Sheehan, 1953), cognitive (e.g. Anderson et al., 2005; Harrington, 1988; Hennessey et al., 2008), or physiological (e.g. Peters et al., 2000; Watkins et al., 2008).

There is sparse literature to indicate the clinical application of terminology. RCSLT state that dysfluency, stammering and stuttering are interchangeable diagnostic terms (RCSLT, 2018a). STAMMA, a widely recognised charity in the UK (previously known as the British Stammering Association; BSA), use the term “stammering" - but recognise that "stutter" is the term most commonly used internationally (BSA, 2020a). The term “stammering” is also used in many of the same journals which publish articles using the term “stuttering”, despite journals often stating a preference for the term “stuttering” (e.g. Journal of Fluency Disorders). This is generally considered to reflect stylistic preference and international tradition rather than disciplinary differences (Murphy, 2011).

Terms for fluency may be related to client preferences and identity. Butler (2013) reported that some individuals describe their own fluency using terms such as “covert stammerer” and “interiorised stammerer”. In an investigation of the terminology preferred by adults, Louis (1999) reported no overall differences between stammering, stuttering, or disfluency *(sic)*, but “stutterer” was preferred to “person who stutters” and conversely, “person who stammers” was preferred to “stammerer”. Person-first language was developed in recognition of the individual as more important than the diagnosis (Dunn and Andrews, 2015). RCSLT encourages SLTs to use person-first terminology (i.e. person who stammers), but also acknowledge that the issue is not unanimous - and that some clients prefer the term "stammerer" (RCSLT, 2018a). Recently, the use of person-first terminology has been criticised by individuals with experience of diagnosis (e.g. Sinclair, 2013), and researchers (e.g. Gernsbacher, 2017). It is argued that the shift towards person-first language implies that diagnosis is a negative attribute, thereby accentuating stigmatising effects. RCSLT advise SLTs to seek the preferences of each client (RCSLT, 2018a), which may perpetuate idiosyncrasies in clinical terminology use.

Whilst this shows how terminology can be influenced by social perceptions of diagnosis, the literature review revealed that these terms are not widely used in research. This suggests divergence between the clinical and research application of terminology for fluency. The BSA recognises a divide in opinion pertaining to the view of stammering as a disability (BSA, 2020b). This may impact whether diagnosis, a medically rooted practice, is even considered appropriate, and the view taken by individuals might also influence their use of terminology to describe attributes. RCSLT are clear in prioritising the terminology preferences of individuals with the diagnosis (RCSLT, 2018a), a position that is not explicitly stated in relation to speech and language diagnoses.

It is unclear why terms “stammer” and “stutter” have remained stable since 1882, yet terms from a similar period for speech and language (e.g. “paralalia”, “alalia”, “congenital aphasia” and “word deafness) are no longer applied in research. Language disorders have been referred to as hidden disabilities (Conti-Ramsden et al., 2014), meaning that they are largely unapparent to an unknowing observer, and it has been speculated that this results in poorer recognition and understanding of the diagnosis (Kamhi, 2004). It has been hypothesised that the “hidden” nature of language hinders the process of establishing a clear evidence base for diagnoses (Bishop et al., 2012 p. 260) and is problematic for identification in practice. Bishop (2017) reported that the lack of evidence for a clear phenotype for language diagnoses was a source of difficulty for SLTs in the diagnostic process. In contrast, fluency is generally regarded to have surface features which are relatively recognisable (Blomgren, 2013; Smith and Kelly, 1997), and is thus more easily identified and understood, which is a possible explanation for the persistence of these terms within the public lexicon.

### 2.3.2 The Effectiveness of International Classification Systems

Three internationally recognised classification systems that include speech, language and fluency diagnoses are: the *Systematised Nomenclature of Medicine Clinical Terms* (SNOMED-CT); the

*International Classification of Diseases and Related Health Problems (*ICD), and the *Diagnostic and Statistical Manual of Mental Disorders* (DSM). Compared to the physical domain, mental and behavioural diagnoses are arguably more complex to define due to limited biological markers (Cooper, 2013). This makes the "zones of rarity", defined as the natural boundaries between "health and normality" (Kendell and Jablensky, 2003 p. 9) difficult to identify, and thresholds challenging to define. Broad systems have been developed to attain and record consistent diagnostic information in research and practice. However, literature indicates that terminological inconsistency permeates these fields (Reilly et al., 2014a; Waring and Knight, 2013), suggesting the futility of their application. In order to evaluate this, the following section reviews the extent that the terminology and criteria in current editions (ICD-10 and DSM 5) are operationalised within speech and language therapy research. SNOMED-CT are the recommended clinical reference terminology for clinical information systems in the UK (Donnelly, 2006; Lee et al., 2013). Unlike the ICD and DSM, SNOMED-CT does not include diagnostic criteria. In line with the National Information Board (Department of Health and Social Care, 2017), RCSLT endorses the use of SNOMED-CT (RCSLT, 2018c). However, SNOMED-CT currently lists 1486 possible “clinical findings”, which includes a vast number of terms for primary speech, language and fluency diagnoses (SNOMED-CT, 2020) and the system is not currently fully developed for operationalisation within speech and language therapy (Moyse, 2019).

The ICD classification system was introduced in 1893 and adopted by the World Health Organisation (WHO) in 1948 (Hirsch et al., 2016). ICD-10 is the tenth official version to have been published (World Health Organization, 1992). ICD-11 will officially come into effect on 1 January 2022 (World Health Organization, 2018), but no changes have been made to the classification of speech, language and fluency diagnoses since ICD-10 (Reed et al., 2019). The ICD is a constituent of a wider set of publications produced by the WHO. This includes the *International Classification of Functioning, Disability and Health* (ICF), which provides a holistic framework that aims to encompass aspects of impairment and the functional impact of disability (World Health Organization, 2001). RCSLT endorses the use of the ICD and ICF in clinical practice (RCSLT, 2018c), yet the extent to which these are operationalised is not known. Classification for speech, language and fluency diagnoses feature in the fifth chapter of ICD-10 which includes all mental and behavioural disorders (WHO, 1992). In recognition of the differing priorities of research and clinical application, the chapter has been reproduced as two separate publications. The *ICD-10 Classification of Mental and Behavioural Disorders Diagnostic Criteria For Research* (World Health Organization, 1993) contains recommendations for diagnostic boundaries as measured on standardised assessments and minimal qualitative detail. The *ICD-10 Classification Of Mental And Behavioural Disorders: Clinical Descriptions And Diagnostic Guidelines* (World Health Organization, 1992) includes additional descriptions of a typical client presentation.

The DSM was introduced by The American Psychological Association (APA, 1952) with a narrower scope than the ICD, focusing on mental and behavioural disorders with intent to meet the inadequacies of the ICD (Tyrer, 2014). Whilst intended to be compatible with the ICD (Frances and Nardo, 2013), there are some differences in classification. Unlike ICD-10, there is a single publication of DSM 5 (APA, 2013) which is designed for use in both research and clinical application. Although clinical guidelines set out by RCSLT make little reference to the DSM 5, there is evidence to indicate that the DSM is used in clinical settings in cognate fields, for example in the diagnosis of autism (Hayes et al., 2018; Wing et al., 2011).

#### *2.3.2.1 Differences in Classification between ICD-10 and DSM 5*

In the ICD-10, speech and language diagnoses are classified as “specific developmental disorders of speech and language”. Unlike speech and language, the diagnostic codes for fluency are categorised as “other behavioural and emotional disorders with onset usually occurring in childhood and adolescence” (World Health Organization, 1992 p. 223). In the DSM 5, speech, language and fluency diagnoses are categorised together as communication disorders, within the bracket of neurodevelopmental disorders.

Neurodevelopmental disorders are defined as “a group of conditions with onset in the developmental period” (APA, 2013 p. 31). The development of large scale classification systems depends on the most recent evidence for each area of health (Frances et al., 1990). This presents challenges when evidence is evolving and there are contrasting views of classification and diagnostic issues. The existence of internationally recognised classification systems only supports diagnostic consistency if applied widely (Clark et al., 2017). There is sparse empirical evidence to indicate the extent that ICD-10 or DSM 5 criteria for speech, language and fluency diagnoses are applied in clinical settings. A summary of terminology and criteria in ICD-10 and DSM 5 is presented in Table 2-4 to illustrate differences:

| ICD 10 | | DSM 5 | |
|---|---|---|---|
| **TERM** | **CRITERIA** | **TERM** | **CRITERIA** |
| **SPEECH** | | | |
| Specific speech phonological disorder | Articulation (phonological) skills, as assessed on standardised tests, are below 2 SD limit for age and at least 1 SD below nonverbal-IQ.<br>Language expression and comprehension on standardised assessment is within 2 SD limit for age. | Speech sound disorder | Persistent difficulty with speech sound production that interferes with speech intelligibility or prevents verbal communication of messages. |
| **LANGUAGE** | | | |
| Expressive language disorder and receptive language disorder<br>(also referred to as mixed receptive/ expressive disorder) | Expressive language skills, as assessed on standardised tests, at least 1 SD below nonverbal-IQ as assessed on a standardized test, and below the 2 SD limit for age.<br>Receptive language skills, assessed on standardized tests, are within 2 SD limit for age. | Language disorder | Persistent difficulties in the acquisition and use of language across modalities due to deficits in comprehension or production. Language abilities are substantially and quantifiably below age expectations. |
| Receptive language disorder | Language comprehension, as assessed on standardized tests, must be below the 2 SD limit for the child's age, and at least 1 SD below nonverbal-IQ as assessed on a standardized test. | | |
| **FLUENCY** | | | |
| Stuttering (interchangeable with the term "stammering) | Speech characterized by frequent repetition or prolongation of sounds, syllables or words, frequent hesitations or pauses that disrupt the rhythmic flow of speech. | Childhood-onset fluency disorder | Disturbances in the normal fluency and time patterning of speech. Anxiety about speaking is associated. |
| Cluttering | Rapid rate of speech with breakdown in fluency, but no repetitions or hesitations, of a severity to give rise to reduced speech intelligibility. Speech is erratic and dysrhythmic, with rapid, jerky spurts that usually involve faulty phrasing patterns. | | |
| **Other** | | | |
| Other developmental disorders of speech and language | Includes lisping | | |
| Developmental disorder of speech and language, unspecified | Only for use where the development of speech or language is significantly impaired but cannot be accounted for by neurological, sensory or physical impairments that directly affect speech or language | | |

*Table 2-4 Terminology and criteria in ICD-10 and DSM 5 for paediatric speech, language and fluency diagnoses*

#### *2.3.2.2 Operationalisation of ICD-10 in Research for Language Diagnoses*

In relation to paediatric language diagnoses, the consistency of terminology and criteria application has been a significant focus in the literature; there has been less attention in this area within speech and fluency research domains. Many research studies in speech and language therapy do not apply ICD research or clinical criteria, and it has been suggested that this is due to the highly restrictive cut-offs for diagnostic boundaries, which generate very low numbers of children eligible for diagnosis (e.g. Johnson et al., 1999; Tomblin et al., 1997; Weindrich et al., 1998). Consequently, many studies reporting to use ICD-10 criteria for recruitment purposes often make idiosyncratic modifications, at the expense of consistency. For example, in a study of children at risk of language disorders Weindrich et al. (1998) originally applied ICD-10 research criteria to a sample of 324 children, finding that only 0.6% met the criteria for receptive language disorder and 3.7% for expressive language disorder. As a result, the criterion that a 2 standard deviation (SD) discrepancy must exist between assessment scores and typical norms was deemed overly restrictive and was reduced to 1.25 SD. Similarly, in a study estimating the prevalence of language disorders Tomblin et al. (1997) identified only 1.12% of children using ICD-10 criteria (scores of 2 SD below the population mean) and therefore applied a 1.25 SD cut off, to generate a prevalence rate of 7.4%. Bishop (1997) has since stated that the inherent fallacy of SD discrepancies is the indiscriminate identification of a set percentage of a population with the lowest standardised assessment scores to be diagnosable.

Johnson et al. (1999) argued that 1 SD below the population mean, (by definition, 16% of the population) was a more appropriate cut-off, and identified 10.5% of their sample to have a language diagnosis using standardised assessments. Johnson et al. (1999) also recruited 10 SLTs to provide expert clinical judgment for each combination of assessment scores, diagnosing an average of 6.7% of the total sample, possibly indicating a discrepancy between clinical diagnosis and research interpretation of assessment scores and criteria. It has been suggested that an overreliance on assessment scores lacks ecological validity if social factors, such as interference with access to daily living are not accounted for in the diagnostic process (Bishop, 1997), which may explain this discrepancy between research and practice. Comparing the studies using ICD-10 classification shows that even when the same systems are used, criteria are not necessarily applied consistently. In addition, these articles used slight variants in terminology: specific language impairment (Bishop, 1997; Tomblin et al., 1997); language disorder (Weindrich et al., 1998); and language impairment (Johnson et al., 1999), suggesting that even the application of a single classification system is insufficient to achieve terminological consistency.

It is indicated that ICD-10 criteria are not applied in clinical settings for language diagnoses, although there is considerably less discussion of the relationship with speech and fluency diagnoses. The lack of clinical utility is possibly due to the challenges that have been reported by SLTs in accessing and implementing full standardised assessments in practice (Betz et al., 2013). Paul (2020) stated that SLTs in the US most commonly use the Individuals with Disabilities Act (IDEA) (2004) as a classification system which, unlike DSM 5 and ICD-10, does not focus on the identification of categories of diagnosis. IDEA includes 14 very broad educational diagnoses and includes the term "speech or language impairment” which covers “communication disorders such as stuttering, impaired articulation, a language impairment or voice impairment that adversely affects a child’s educational performance” (Individuals with Disabilities Act, 2004). There is currently no compatible overarching structure for classification and coding in UK clinical practice, although this appears to be changing with the introduction of SNOMED-CT in speech and language therapy (Donnelly, 2006; Moyse, 2019). Several publications report problems with terminological inconsistency for language diagnoses (e.g. Bishop, 2014; 2017; Reilly et al., 2014a; Walsh, 2005). This suggests that broad-based classification systems, which aim to facilitate consistency, are currently either not being used or are not applied unanimously across the profession.

### 2.3.3 Terminological Issues for Speech, Language and Fluency Diagnoses

The main issue which has brought terminology into focus in speech and language therapy has been the extent of variation and consistency of its application, particularly for primary language diagnoses. Across the literature, several commentaries suggest potential causes of variation and discuss the negative consequences. Terminology appears to serve different purposes across contexts, which varies across research and practice, and additional paradigm differences can be noted between health and education regarding the role and perception of diagnosis. Current literature indicates that as a field, speech and language therapy is imbued with issues that distinguish it from cognate fields of psychology and medicine. These unique issues may contribute to terminological inconsistency and thereby limit any comparisons that can be drawn across fields. Currently, multiple competing theories stemming from both health and education dispute how terminology should be used for diagnoses. In addition, the diagnostic categories for speech, language and fluency are underpinned by a relatively weak and contested evidence base. Some concepts are challenging to define and it is therefore difficult to achieve a shared understanding, both within and beyond the profession. The following section will review current perspectives and evidence for terminological inconsistency, and literature documenting recent drives within the profession that aimed to achieve consensus for language diagnoses.

#### *2.3.3.1 Is Terminology Used Inconsistently?*

Much of the literature discussing terminology use in speech and language therapy refers to its inconsistent application in clinical practice, but few articles provide empirical evidence for this observation. Cowie et al. (2001) reviewed 35 electronic adult case notes kept by five SLTs and one SLT assistant in one NHS service in the UK. It was found that terminology was used inconsistently between clinicians, and across different cases kept by the same clinician, although this may have been related to the lack of standardised practice in case note documentation. The survey reported in *Bulletin* by Clark et al. (2013) suggested that a variety of terms were used for language diagnoses by SLTs and teacher in

Scotland (see Table 2-3) but this article was not peer-reviewed and there was limited methodological information provided about the study.

None of the research articles identified by this review used diagnoses determined by SLTs practising in the UK for recruitment purposes, and it is therefore not possible to use articles to retrospectively identify clinical terminology use.  In a systematic review of research for oral language comprehension, Tarvainen et al. (2020) reported the diagnostic terminology used in each study, covering 2460 participants across 25 studies. Of the 25, nine used the terms "specific language impairment", "language impairment" or "developmental language disorder", 12 used more generic terms (e.g. language difficulties, low receptive vocabulary skills, or poor expressive and receptive language skills) and four studies used a large variety of terms.  However, almost all studies did not utilise diagnoses assigned by clinicians or were not conducted in the UK.  Of those that did (e.g. Riches, 2013), all had sample sizes below 10 and were therefore not representative of UK clinical practice.

There has been significant discussion of terminology variation for language diagnoses. To identify the extent of terminology variation occurring across research, Bishop (2014) constructed a Google Scholar search over the period 1994-2013, combining a series of: (1) a prefix to indicate a primary need, (2) an anchor for language, and (3) a suffix to denote an impairment.  Of 168 possible prefix-anchor-suffix combinations, 130 were returned at least once, and of those, 33 terms returned more than 600 results.  This variation was deemed unreasonable due to the impact on efficacy for conducting systematic searches, thus impeding the development of a high-quality evidence base (Bishop, 2017; Reilly et al., 2014a).  This however does not necessarily reflect the clinical application of terminology usage.

Comparatively, there has been less focus on terminological variation for speech or fluency diagnoses across the literature. Insight can however be gleaned from a special issue of the Australian journal *Advances in Speech-Language Pathology,* to which several experts in speech disorders submitted assessment and intervention recommendations for a fictitious case study presented by Holm and Crosbie (2006). The focus was not on terminology but the journal issue offers insight into the terminology used by over 20 international experts. The case study was introduced as having “phonological impairment and highly unintelligible speech” (Holm and Crosbie, 2006), however, terms used across articles included: "phonological disorder" (Hayden, 2006; Morrisette et al., 2006), “phonological impairment” (Bernhardt et al., 2006; Bowen and Cupples, 2006; Hodson, 2006), “inconsistent speech disorder” (Crosbie et al., 2006; Dodd et al., 2006), “speech difficulties” (Stackhouse et al., 2006), “speech impairment” (Baker, 2006; McLeod, 2006) and “speech sound disorder” (Williams, 2006). One article made minimal use of a term, stating that the case had a diagnosis of “speech/sound disorder” but the rest of this article referred to “disordered speech” (Müller et al., 2006). This journal edition alone illustrates the variation in terminology used by different researchers. Similarly a special virtual issue of the *International Journal of Language and Communication Disorders* entitled “Stammering” collated 12 articles contributed by a range of experts. Of the 12, 4 used the term “stuttering” (Fry et al., 2014; Karimi et al., 2014; Lowe et al., 2016; Valente et al., 2015), 3 used “developmental stuttering” (Baxter et al., 2015; Buhr et al., 2016; Johnson et al., 2016), 1 used “cluttering” (Farrell et al., 2015), and 1 used “disfluency” (Scaler Scott et al., 2014). This illustrates that for speech and fluency, at least some degree of terminology variation exists within research.

#### *2.3.3.2 Proposed Causes of Terminological Inconsistency*

There is a plethora of literature that discusses possible causes for terminological inconsistency, mostly in relation to the theoretical challenges of establishing diagnostic boundaries (Bishop, 2014; 2017), the practical implementation of terms across different contexts (Walsh, 2005), and the disparity of priorities between research and practice (Sun and Wallach, 2014). In research, often the aim of a diagnostic entity is to identify a clear set of defining characteristics in order to compare participant groups or assess outcomes of intervention. Sun and Wallach (2014) suggested that the pursuit of increasingly homogeneous subtypes has increased the number of terms in circulation.  As discussed, efforts to ascertain clear phenotypes and criteria for speech, language and fluency diagnoses has resulted in competing theories and multiple approaches to subtyping.  In practice however, clients often display characteristics of multiple diagnostic categories (Snowling, 2012) which complicates the clinical identification of a single diagnosis (McGregor et al., 2020).  Increasingly, evidence disputes the ecological validity of pure language diagnoses, indicating that they form part of a broader phenotype (e.g. Botting and Marshall, 2017; Rudolph et al., 2019; Vuolo et al., 2017), with a heterogeneous presentation. The extensive overlap and the weak evidence base supporting discrete subtypes arguably renders the notion of using pure subtypes in practice implausible (Kamhi, 2005; Walsh, 2005).

Speech and language therapy is influenced by both medical and educational paradigms, each with conventions for how diagnoses are conceptualised.  Walsh (2005) commented that the dominating paradigm remains medical, where terms such as “impairment” prevail, defined in the WHO ICF as “disorder or damage to the body” (World Health Organisation, 2013).  However, it has been argued that many diagnoses in speech and language therapy have major impacts on academic outcomes, and are therefore educational needs (Sun and Wallach, 2014).  The categorisation of diagnoses into separate entities is typical in medical sectors, whilst educationalists widely dispute their use entirely, often favouring a dimensional approach to diagnosis (Snowling, 2012).  The dimensional approach appraises the severity of need, rather than focusing on identifying the type (Brown and Barlow, 2005).  Rather than using terms to indicate a  diagnostic category, broad overarching terms are used to indicate the presence of a support need, which can be supplemented by individualised descriptions of the type and severity of needs, and provision can be individualised once a need has been flagged (Lauchlan and Boyle, 2007; Sun and Wallach, 2014).  However, critics of a dimensional approach argue that its application in research contexts would be overly simplistic (Snowling, 2012), assessments difficult to devise and administer (Brown and Barlow, 2005), and the practical benefits of categories are lost, such as linking specific diagnoses with targeted intervention (Archer and Green, 1996).

The use of broad terms may be problematic in practice, for example, "emotional behavioural disorder" was recognised to be representative of an overly heterogeneous population (DfE, 2012), and as a result, associated interventions were too general to meet the needs of individuals. In contrast, the use of specific diagnoses presents a risk that all children with that particular term have homogeneous needs, leading to a potential oversight of idiosyncrasies (Archer and Green, 1996 p. 127).  However, Dockrell et al. (2014) found that at present, many diagnostic categories within paediatric speech and language therapy are not yet associated with sufficient evidence to guide decisions pertaining to type and dosage of intervention. As suggested by Gallagher et al. (2019), such disputes may in themselves increase the number of terms in use, depending on the level of specificity deemed most useful.

SLTs practice across education and health settings which Walsh (2005) argues contributes to variation in terminology. For example, Sun and Wallach (2014) reported differences in terms used across professional groups in the US, with SLTs more likely to use the term “SLI” than education providers, who more often used broader terms such as “speech and language impairment” or “specific learning difficulties”.  Similarly, in a UK study, Dockrell et al. (2014) found that educational professionals applied broad terms such as “speech, language and communication needs” to children with communication needs, compared to SLTs, who were more likely to use more specific terms.  This suggests that terminology may be influenced by paradigm differences, such as the overall preference for a dimensional approach observed in education research (Gallagher et al., 2019), thus impeding a shared understanding between professionals.

Murza and Ehren (2020) stated that the existence of a vast number of terms weakens the clarity of diagnostic boundaries, which are essential for planning service models and thereby delivering appropriate support. Parsons et al. (2014) postulated that, compared to language, the relative robustness of clinical application of criteria for similar developmental diagnoses is a result of clear guidance from bodies such as the National Institute for Health and Care Excellence (NICE). If the theoretical basis for criteria is contested and not supported by a strong evidence base, this arguably renders clinical implementation challenging (Snowling, 2012; Volkers, 2018), and a lack of an overall guideline may result in divergent interpretation of evidence and recommendations. The variation of criteria across services may also generate regional inconsistency, as the definitions of diagnostic terms are arguably reduced to their associated criteria (Murza and Ehren, 2020; Strand and Lindsay, 2012). Service criteria are known to vary nationally and are heavily directed by commissioning bodies, rather than the evidence base (Hancock, 2019). Therefore, in the absence of a strong definition that is unanimously applied across the profession, this may drive inconsistent interpretations of terminology across clinicians.

There are also differing priorities for the function of a diagnosis within clinical contexts, which may create a need to modify terminology use. Walsh (2005) proposed that there is a requirement for terms to be precise when used within the profession, for example in case notes and literature searches, but such a level of technicality is not always appropriate for public-facing purposes such as service delivery, advocacy and legislative activity. Communicating specialist terms such as "phonological", to those outside the profession, is arguably challenging (Eadie, 2005), and the need to be understood may result in the use of alternative terms, thus increasing the number in use. Kamhi (2004) suggested that even some of the more widely recognised terms used by the profession have complex and highly specific definitions (e.g. “language”). Although “language” is a word with a definition that is familiar to most nonspecialists, (i.e. to refer to English, Spanish or Urdu), the professional definition encompasses a large number of complex concepts e.g. “socially shared code or conventional system for representing concepts through the use of arbitrary symbols and rule-governed combinations of those symbols” (Owens, 2005 p. 7). However, this proposal does not account for the idea that some hidden diagnoses (such as dyslexia and dyspraxia), which are arguably more widely recognised (Bishop, 2010a), are also associated with similarly complex terms and definitions.

#### *2.3.3.3 Consequences of Terminological Inconsistency*

Across the literature, the negative consequences of terminological inconsistency have been discussed, which Walsh (2005) deemed to be a poor reflection on the profession. Several articles discuss problems caused by inconsistent terminology use in research, such as difficulty synthesising evidence (Leonard, 2020) and reduced funding for research (Bishop, 2010b). For practice, consequences may include poor communication between services (Parsons et al., 2014) and delays to the initial identification of needs (Bishop, 2014; Dockrell et al., 2017). However, there is currently limited evidence to show how terminology is used by SLTs in the UK, which renders it challenging to verify proposed consequences.

Public awareness of language diagnoses is considered to be relatively low (Bellair et al., 2014; Bishop, 2004; Grist and Hartshorne, 2014), despite similar levels of evidence for aetiological features as more widely recognised diagnoses such as autism and dyslexia (Bishop, 2014; Kamhi, 2005). Most negative consequences were considered to be perpetuated by low public awareness of diagnostic terminology which, in itself, was considered to be a result of the extent of variation. Kamhi (2004) suggested that the lack of an agreed term and definition limits public awareness and communicability of primary language diagnoses. Kamhi (2004) compares diagnostic terms to memes, which are elements of culture that are imitated and passed on (Blackmore, 2000). Like successful memes, effective diagnostic terms are easily understood, recognised, and therefore well communicated. For individuals, diagnostic terms, can provide a “handle” to create and locate communities, drive self-advocacy (Ward and Meyer, 1999) and propel funding exercises (Silverman and Brosco, 2007). Poor awareness, therefore, has a potentially detrimental impact on client groups. Lack of public recognition also restricts campaigning efforts (Walsh, 2005) and consequently, diagnoses may be associated with poorer funding for research. Bishop (2010b) demonstrated that, compared to developmental diagnoses of similar prevalence and severity, research pertaining to specific language impairment generated lower publication indices. This suggests that terminology use has a vast impact at both societal and individual levels.

Snowling (2012) and Bishop (2010) argued that terminology which is used inconsistently becomes unfamiliar to professionals and the public, thus compromising initial identification of difficulties. In a survey of 146 UK education professionals and 67 SLTs, Dockrell et al. (2017) reported that educational professionals had encountered a wide range of terminology including: SLCN, communication disorder, language difficulty, speech difficulty, specific language impairment, language learning difficulty, speech sound disorder, receptive language difficulties, expressive language difficulties, fluency difficulty, word finding difficulties, articulation disorder, phonological disorder and oro-motor dyspraxia. Despite familiarity with the terms, knowledge of the definitions was low amongst education professionals. Education professionals, but not the SLTs, classified specific difficulties together, for example, "stuttering", “repetition”, and “dysfluency” were all considered together as a speech problem. This might reflect a preference for a dimensional approach, or a lack of awareness of the nuances, particularly as the education professionals reported that they had received minimal training in speech and language therapy concepts. Dockrell et al. (2017) suggested that low awareness was caused by inconsistent use of terminology - and that this had the effect of reducing teachers' ability to reliably identify the needs of children.

A research trend has been noted for collating characteristics, such as linguistic markers, and designating a diagnostic term (Gagnon et al., 1997). It is suggested that this has resulted in the injection of numerous new descriptive entities into the professional lexicon without substantial supporting evidence. When terms intended for use descriptively are interpreted as explanatory, Walsh (2005) highlighted that this implies an established aetiology. For example, the distinction between “delay” and “disorder”, has been used in clinical practice to determine intervention pathways (Bishop, 2017; Cunningham et al., 2019; Dodd, 2011). The definitions of “delay” and “disorder” are arguably simple to understand and it is suggested that this causes terms to permeate from research into clinical practice (Kamhi, 2004). Despite weak evidence to support differences in response to intervention between children with characteristics of a delay versus a disorder (Bishop and Edmundson, 1987; Cole et al., 1990), some services in the UK historically excluded children showing a delayed pattern of language acquisition from provision (Bishop, 2017). This provides a clear example of the importance of terminology in the potential outcomes for children.

Previous research has shown that the use of terminology can impact patient outcomes. Nickel et al. (2018) found in a randomised crossover study of 550 people with small papillary thyroid cancers that different diagnostic terms used by clinicians resulted in patients opting for different intervention options. When the diagnosis was presented as "cancer" more invasive management options were chosen compared to the use of terms such as "lesion" or "abnormal cells". Similarly, the use of the term "mild traumatic brain injury" over "concussion" or "minor head injury" has been shown to produce more negative expectations of recovery trajectories (Kempe et al., 2013; Weber and Edwards, 2010). Whilst the acute impact is tangibly less for SLTs, such evidence highlights the potential impact of which terms are used by clinicians, and supports the professional drive to achieve consistency.

There is a sense of urgency across research to resolve the issue, to improve the lives of individuals. Bishop (2014) suggested that recognised diagnoses can foster an increased sense of belonging and can lead to an emphasis on positive attributes. However there is mixed optimism about the potential for a resolution, given the age of the issue (Schindler, 2005), and the lack of progress to date (Kamhi, 2005). It has been suggested that prior to resolving the consistency regarding diagnostic terms, the profession must tackle more basic terminological confusion, such as the public distinction between speech and language (Kamhi, 2005; Murza and Ehren, 2020).

#### 2.3.3.4 Language Diagnoses: The Pursuit of Terminological Consensus

For many years, the criteria and terminology for language diagnoses have been a prominent topic of scholarly debate and discussion (Leonard, 2020), resulting in multiple attempts to achieve consistency (Schindler, 2005; Walsh, 2006). This section will review a recent effort that occurred in the UK which aimed to internationally unify the professional use of terminology and criteria. Whilst numerous terms were used across research, the prominent term in clinical practice in the UK was considered to be "specific language impairment" (SLI) (Reilly et al., 2014b), despite having never been included in the DSM or ICD (RCSLT, 2017d). Criteria for SLI stipulated that language acquisition must be asynchronous with all other areas of child development, as measured by a discrepancy between assessment scores of language and nonverbal-IQ (Bishop, 1997). This criterion was criticised however, due to the lack of substantial evidence for differences in clients' responses to intervention based only on their nonverbal-IQ scores (Bishop et al., 2016). Consequently, there was potential for children with low nonverbal-IQ scores to be unnecessarily excluded from the diagnosis and, by extension, access to intervention (Bishop, 2014; Norbury, 2014). SLI criteria were often favoured by researchers as they provided a relatively homogenous group by narrowing the phenotype through exclusion (Reilly et al., 2014b). However, it is rare for one area of development to be affected in isolation (Snowling, 2012), and therefore, terms that did not require this criterion such as "language disorder" and "language delay" were often used by UK services (Parsons et al., 2014), despite not being clearly defined (Bishop, 1997; 2014).

Prior to the publication of DSM 5, the American Speech-Language Hearing Association (ASHA, 2012) issued a statement that outlined the problems associated with the paucity in evidence to support the criteria for SLI. DSM 5 was published during a period of rapid change for terminology and criteria, and on the recommendations of ASHA, SLI was not featured in the final publication (APA, 2013; ASHA, 2012), and instead "language disorder" was selected (APA, 2013). This was criticised by Reilly et al. (2014a), who argued that over-inclusivity of the term yielded a large number of unrelated results when entered into a search engine, which has ramifications for researchers collating evidence for reviews and for the public in seeking information. In response to the criticism of SLI, the *International Journal of Language and Communication Disorders* (IJLCD), which is produced by RCSLT, published a special issue of commentaries from invited authors regarding terminology and criteria used for language diagnoses (Ebbels, 2014). Inconsistency in terminology was discussed heavily, and a revision of criteria to include more children in the diagnosis was suggested by Reilly et al. (2014b), from 2 SD below the mean to 1.25 SD. Parsons et al. (2014) considered this to be overly inclusive and impossible to support clinically, reflecting the previously discussed notion of service capacity influencing the interpretation of diagnostic criteria. Arguably, this demands advocacy for increased clinical resources, rather than reviewing diagnostic criteria in accordance with the capacity to provide intervention. Palmer et al. (2011) previously found that speech and language therapy services were unable to meet the clinical need for autism diagnostic assessments, resulting in delays and inequitable access. Consequently, this study, from the field of child psychology rather than speech and language therapy, included recommendations that national targets and service provision is reviewed. Alterations to diagnostic criteria were not suggested.

The recognised problems with inconsistency led to the initiation of a UK based study, known as the CATALISE project, which aimed to produce universally agreed-upon terminology and criteria for language diagnoses (Bishop et al., 2016; 2017). Using a Delphi method, key stakeholders were invited to review and comment on statements regarding criteria and terminology. Participants included authors of articles featured in the special issue of IJLCD, SLTs, members of charitable organisations, researchers, and clinicians across speech and language therapy, education, psychiatry and psychology. The final panel of 59 members were recruited from Australia, Canada, Ireland, New Zealand, and the UK. On two separate occasions, participants rated their level of agreement with statements about criteria and submitted amendments, which were reviewed by two moderators, with the aim of establishing consensus for criteria (Bishop et al., 2016) and terminology (Bishop et al., 2017).

Bishop et al. (2017) reported overall comments from the panel, revealing several disputed issues. Terms deemed less stigmatising such as "needs" and "difficulties" were perceived as weak for the purpose of advocacy, congruent with the notion that terminology is context-dependent (Walsh, 2005). The term “delay” was discounted as, despite being ingrained in UK services and included in the clinical training of SLTs, diagnostically differentiating clients based on the nature of language acquisition is no longer aligned with the evidence base, (Bishop, 2017). Outcomes included recommendations that the term SLI would be replaced by "developmental language disorder" (DLD), with the removal of a discrepancy between nonverbal-IQ and language scores. In recognition of evidence for a broad phenotype, it was agreed that DLD could be diagnosed in the presence of some related neurodevelopmental conditions, however, the term "language disorder" was recommended for children with biomedical diagnoses that impact language (Bishop et al., 2017). These recommendations are displayed in a diagram produced by Bishop et al. (2017), shown in Figure 2-2:

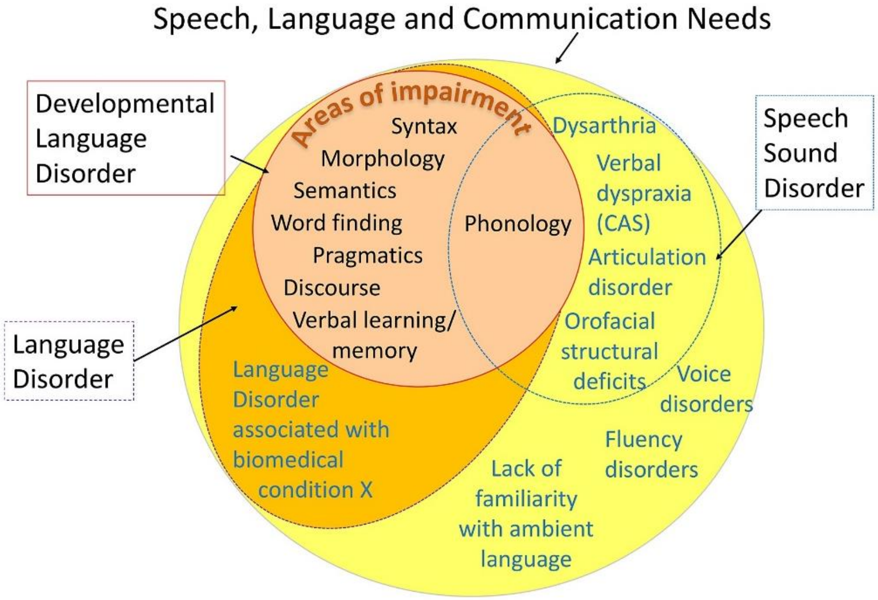


*Figure 2-2 Diagram from the CATALISE project showing relationship between proposed categories (Bishop et al., 2017 p. 1076)*

The global response to the recommendations of the CATALISE project was mixed. The professional bodies of SLTs in Ireland (Irish Association of Speech and Language Therapists; IASLT), Canada (Speech-Language & Audiology Canada; SLAC), Australia (Speech Pathology Australia; SPA) and the UK (RCSLT) promoted the use of the term DLD in 2017 and 2018. As an adaptation, RCSLT (2017d) added: "language difficulties in under-5s with few risk factors" alongside fluency disorders, voice disorders, and lack of familiarity with the ambient language (Figure 2-3). RCSLT did not state a reason for this addition, which arguably poses a reduction to consistency:

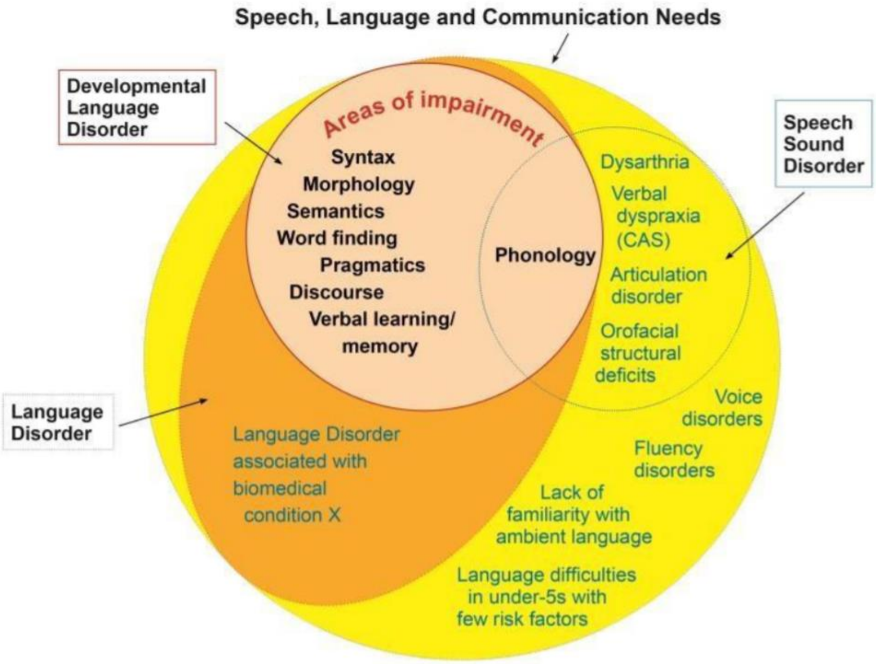


*Figure 2-3 Diagram to show recommendations from the CATALISE project, adapted by RCSLT*

Whilst Speech Pathology Canada advised the use of the term DLD in 2018 (Speech-Language and Audiology Canada, 2018), in 2019 a further study was conducted with 54 Canadian SLTs, also using a Delphi method and sharing the aim of developing consensus for diagnostic terminology and criteria for clinical use (Cunningham et al., 2019). Similar to the CATALISE project, the study consisted of two phases: a pooling of relevant diagnostic terms from research literature and clinicians, and a Delphi review of terms. Policymakers and SLTs were consulted to review the accuracy of statements relating to preschool communication disorders. The study consisted of four rounds of surveys, inviting participants to review and comment on the clarity of criteria and clinical validity of diagnoses. In addition to language, this study also considered speech, fluency, voice and feeding/swallowing diagnoses. Consensus was reached for many of the terms, and there was more commentary and discussion from participants regarding speech and language diagnostic terms compared to fluency. Similar to the CATALISE project, much of the commentary focused on the use of the term "delay", and participants reportedly supported the retention of the term "delay" for very young children. During the study however, RCSLT (2017d) issued a briefing paper promoting the use of the term "difficulty" instead of "delay" for children under the age of five, if there is uncertainty whether a disorder is present. As international consistency was prioritised, Cunningham et al. (2019) reported that the panel opted to align with the RCSLT recommendation, and maintained "delay" for speech sound disorders, which is also consistent with RCSLT. Consistency was also prioritised by the Irish professional body for SLTs, IASLT, stating that using the same term "can only help make the conversation about DLD more accessible" (IASLT Working Group, 2017 p. 5). The outcome of the Canadian study was three documents containing definitions of terms, based on clinical and research expertise, and SLT opinion and review. Cunningham et al. (2019) reported that SLTs did not always agree with research recommendations, but provided insight into how the needs of clients were viewed in practice. Arguably this highlights a need to understand issues arising in practice prior to attempting to pursue a resolution. The challenges associated with changing practice for clinicians, particularly those who did not participate in the study, were acknowledged, and there was an anticipated need for concerted knowledge translation and implementation efforts, in order to evoke broad changes.

The American Speech-Language-Hearing Association (ASHA) published several opinion pieces debating the introduction of DLD (Gray, 2019; Mettler, 2019; Volkers, 2018), and in October 2020, the term SLI was maintained within the spoken language disorders section of the ASHA practice portal webpage (American Speech-Language Hearing Association, 2020). The change in terminology was further discussed in an online issue of *Perspectives of the ASHA Special Interest Groups* (Green, 2020), which featured contributions from invited authors. All authors appeared to support the acquisition of one consistent term, but not all were in favour of DLD criteria, a view expressed by Rice (2020), despite being a member of the original CATALISE panel. The need for a consistent term in the context of research was a strong theme (Leonard, 2020; Rice, 2020). The benefits of criteria associated both with SLI and DLD were recognised (Rice, 2020). Leonard (2020) articulated the importance of stating the criteria used in study populations, particularly with regard to the relationship between nonverbal-IQ scores and language, in order to maintain the growth of a historic evidence base. However, Murza and Ehren (2020) challenged whether the effort to establish a consistent term actually reflects clinical priorities. McGregor et al. (2020) reported that SLTs in the USA generally agree with DLD criteria, but many have expressed concerns that the term "developmental" implies to parents, policymakers, and insurance companies that the diagnosis is transient. McGregor et al. (2020) speculated that this has fostered reluctance amongst SLTs to use the term, and therefore the connotation of the terminology itself may have been a barrier for using the diagnosis. Several authors recognised that public awareness of DLD remains low (Leonard, 2020; McGregor et al., 2020; Murza and Ehren, 2020), particularly compared to autism (Paul, 2020). Although it was acknowledged that DLD appears to have generated more public awareness compared to SLI, Rice (2020) suggested that this is more attributable to the recent harnessing of social media.

Comparing the criteria across CATALISE, ICD-10, and DSM 5, Paul (2020) observed consistency across the broad functional criteria. Paul (2020) argued that the most significant factor causing the lack of public awareness is not consistency, but the communicability of terms, congruent with suggestions made by authors 10 years prior to the CATALISE project (e.g. Kamhi, 2004; Walsh, 2005). Whilst acknowledging strong reasons for achieving terminological consistency, including benefits to individuals for advocacy and earlier recognition of needs, doubt of success was expressed across the majority of discursive articles. There are extensive challenges faced by SLTs to change practice, and Kamhi (2005) suggested that previously, professional bodies did not provide a source of adequate guidance with regard to the renaming of the profession. Throughout the literature, success in terminological drives is portrayed to be largely dependent on the diagnostic decisions of SLTs. This notion will be considered further in Chapter 3.

### 2.3.4 Summary of Findings

The synthesis of research obtained by the review shows how paediatric speech, language and fluency diagnoses have been classified over time. Terminology has shifted in response to developments in theoretical perspectives, societal perceptions and approaches to intervention. The identification of diagnostic subtypes has been shown to produce variation in research, but this level of specificity is not necessarily prioritised in clinical settings (Walsh, 2005). The merits of a dimensional approach over distinct categories have also been debated within and around speech and language therapy. Minimal empirical evidence was found to indicate clinical use of terminology, however, a glut of literature discursively appraised terminological inconsistency in relation to language diagnoses. It has been revealed that broad-based classification systems that promote consistency - such as the ICD-10 and DSM 5 – are often not operationalised as intended in speech and language therapy. Compared to speech and language, terminology for fluency diagnoses appears to have been relatively stable over time, and Cunningham et al. (2019) reported that less debate was required to achieve an agreed definition amongst clinicians. This may indicate that there are no problems with the consistency of terminology used for fluency, but empirical evidence to support this was not found.

This review has shown that variation in terminology is thought to impact the identification of children's needs, public communication about diagnosis, lobbying, and equitable access to specialist services. Some scholarly debate examined the causes of terminological inconsistency, however, this was limited to expert opinion and commentaries. Whilst numerous terms exist in research, this does not necessarily reflect the terminology used in clinical practice. Given the indication that the use of terminology is context-dependent, extrapolating the assumption that terminology is used inconsistently beyond research should be tentative. For example, subtyping has been considered to increase the number of terms used in research, but some systems were never intended for clinical diagnostic purposes (e.g. Shriberg et al., 2010).

# CHAPTER 3: DIAGNOSIS AND THE ROLE OF THE SPEECH AND LANGUAGE THERAPIST

This chapter examines the process of diagnosis and issues encountered within the clinical role of paediatric SLTs. As with the previous chapter regarding terminology, much of the literature identified relates to language diagnoses, rather than speech or fluency. Much of the critical discussion focuses on the challenges that are inherently associated with making diagnoses based on observation and assessment of behaviour. The purpose that diagnosis serves has caused debate across the literature regarding the most useful way to classify diagnoses, with conflicts arising between clinical and research priorities. There is considerable discussion of various drawbacks associated with diagnosis, particularly negative societal perceptions of diagnoses. The diagnostic experiences of parents and practitioners have been documented, and this review examines the implementation of diagnostic processes in clinical practice. Studies that investigate how SLTs approach diagnosis in practice are discussed, indicating some influential factors in practice, such as workplace and child characteristics. The outcomes of the issues presented across Chapters 2 and 3 are used to frame the current research study and inform the development of three research questions.

## 3.1 Challenges Diagnosing Behaviourally Based Diagnoses

The boundary between typical development and diagnosable cases is widely criticised for lacking clarity, and there is debate regarding the cut off points for diagnosis (Tomblin et al., 1997). It has been suggested that behaviourally determined diagnoses should not be strictly viewed as discrete clinical entities, but as representing the extremities of behavioural continuums (Snowling, 2012). The diagnostic characteristics of speech, language and fluency present with vast heterogeneity, and there is no clear phenotype available for clinical reference (Ebbels, 2014; Reilly et al., 2014b; Wright, 2014). This creates problems in defining diagnostic categories and criteria and, like many developmental diagnoses, no biomarkers are available for identification purposes (Bishop, 2014; Dodd, 2013; Hayes et al., 2018; Manning and DiLollo, 2017). Consequently, from a research perspective, there are challenges in classifying diagnostic boundaries. Lauchlan and Boyle (2007) suggested that this leads to multiple ways of classifying diagnoses, resulting in more terminology. However, Sun and Wallach (2014) speculated the reverse causation; that the use of different terms has obscured any prevailing commonalities across children. Rutter (2011) suggested that the ICD and DSM have been developed based on weak evidence and that this has resulted in an excess of diagnostic categories, high rates of comorbidity, and an increase in the use of nonspecific diagnoses. This arguably reduces the potential benefits of diagnosis, such as the identification of appropriate intervention. The multitude of means to conceptualise diagnosis has rendered its usefulness a controversial issue.

The validity of diagnoses as clinical entities arguably depends on the existence of “zones of rarity” (Kendell and Jablensky, 2003), meaning that the definitions of diagnoses must be separable from each other by natural boundaries. Increasingly, research indicates that children with language difficulties are more likely to present with difficulties across the spectrum of executive functioning – including working memory, planning, task shifting and inhibition (Henry et al., 2012; Pauls and Archibald, 2016; Trainor, 2010) – which feature as essential components of multiple developmental diagnoses. The extent of convergence arguably reduces the effectiveness of aligning behavioural presentation with a specific intervention via a single diagnostic term (Henry et al., 2012; Larsson et al., 2012; Van Hulle et al., 2012). Kendell and Jablensky (2003 p. 7) suggested that when diagnostic categories overlap, they become “*arbitrary loci in a multidimensional space in which variation in both symptoms and etiology (sic) is more or less continuous*”.

In early attempts to define the diagnosis of autism, differentiating it from primary language diagnoses was acknowledged by Wing (1979) to be highly challenging. The lack of resolution in devising a boundary has potentially contributed to the recognised ongoing problems for clinicians in diagnostic practice (Conti-Ramsden et al., 2006; Whitehouse et al., 2007). In commentaries from clinicians on a fictitious case of a typical client with autism, Tierney et al. (2012) reported that most were reluctant to ascribe a diagnosis of either a language disorder or autism due to their shared characteristics. In focus groups with 17 currently practising SLTs, Thomas et al. (2019) found that the majority were confident to distinguish autism from developmental language disorder. Their level of confidence was largely attributed to clinical experience and the selection of assessments. However, in an investigation of standardised assessments as differentiation tools, Dyck et al. (2011) revealed minimal detectable differences in scores across children diagnosed with a range of developmental diagnoses, including autism and language disorder. This suggests that the SLTs' confidence in differentiation may not have been wholly aligned with valid diagnoses derived from the interpretation of standardised assessments.

The growing body of evidence for considerable overlap between clinical presentations of behavioural diagnoses has led to the argument that a dimensional approach to classification is more useful than categories. The dimensional rationale endorses the use of broad terms and individualised descriptions of needs (APA, 1994). There is evidence that suggests a professional preference for a dimensional approach, and the merits of diagnostic categories have been questioned. Focus groups with SLTs revealed that a dimensional approach was perceived to be more useful for clinical assessments, given the complex and multifaceted presentation of their clients' communication (Thomas et al., 2019). Fulcher-Rood et al. (2019) obtained a similar finding in interviews with SLTs in the US, many of whom described the need for assessments that capture characteristics across behavioural domains. This highlights a potential professional demand for an enhanced focus on dimensional classification, rather than research that strives to define specific subtypes.

In the absence of clearly defined aetiologies for language diagnoses, Sun and Wallach (2014) suggested that it is more useful to diagnose speech and language diagnoses more broadly as learning difficulties. The use of broad terms and individualised descriptions is popular both within educational research (Gallagher et al., 2019; Lauchlan and Boyle, 2007; Sun and Wallach, 2014) and articles exploring teachers' experiences and understanding of diagnoses (Dockrell et al., 2017; Dockrell et al., 2006; Dockrell and Lindsay, 2001). Dockrell et al. (2017) obtained the perspectives of teachers in relation to supporting children with a range of communication difficulties. Teachers rated the usefulness of information about the children's difficulties. Most considered the diagnosis to be the least useful, preferring to receive guidance related to intervention for each child. Walsh (2005) however raised concern that SLTs' use of descriptive terminology for diagnostic purposes may result in such terms being perceived as legitimate clinical entities - thus increasing the number of terms in use. Kamhi (2005) meanwhile disputed the use of unfounded medicalised terms, which may falsely imply an established diagnostic boundary.

A dimensional classification system has limited congruency with research priorities such as comparing participant outcomes and determining the efficacy of interventions. There is an argument that a categorical system is necessary for research seeking to establish aetiology and targeted intervention (Snowling, 2012). This rationale is however limited by the widely recognised lack of a clear aetiology to support evidence based categories from which to research aetiological features. There has been a recent surge in research investigating the genetic basis of diagnoses related to speech (e.g. Shriberg et al., 2005), language (e.g. Bishop et al., 1995; Kalnak et al., 2018) and fluency (e.g. van Beijsterveldt et al., 2010). Such research inherently generates terminology to represent elements of proposed categories, which is arguably problematic (Lauchlan and Boyle, 2007; Snow and Lecavalier, 2011). Shriberg et al. (2005) argued that subtyping improves diagnostic accuracy through the identification of an aetiological basis. Research to improve the accuracy of subtyping often has a focus on clinical outcomes, such as meliorating screening and assessment tools, and tailoring interventions for specific needs (Lewis, 2011). However, this was not reflected in the studies investigating the views of SLTs, representing a potential disconnect between research and evidence based practice.

In addition, Sun and Wallach (2014) argued that research rarely accounts for the practical and financial constraints which limit the extent that subtypes can be clinically identified. In a survey of 364 US-based SLTs Betz et al. (2013) demonstrated that practical factors (e.g. access to up to date standardised assessment tools and time to implement them) were prioritised as a guide for diagnosis over evidence based factors (e.g. psychometric properties of assessment tools). It could be argued therefore, that the constraints that exist within practice might constitute relatively weak reason to support the adoption of a dimensional approach. However, the research community arguably has a duty to respond and meet the needs of frontline clinicians working with the complex reality of individuals with communication difficulties.

## 3.2 Practicalities and Perceptions of Diagnosis

It is evident that defining the boundaries of diagnoses is theoretically challenging and abound with controversies. This section reviews evidence pertaining to the practical application of diagnostic criteria within the context of the social world. An overarching debate across literature has been the balance of advantages and drawbacks associated with diagnosis. Bishop (2014) discussed the practical usefulness of ascribing diagnoses, whilst recognising the social debates relating to stigmatisation, identity and lowered expectations. The potential disadvantageous outcomes of abolishing diagnoses include the loss of a cohesive handle in advocating for resources at a governmental level, generating public awareness and acquiring research funding (Bishop, 2014). This is of particular concern as the distribution of resources is poor across paediatric speech and language therapy (Gross, 2017; Hancock, 2019). The impact of diagnosis at an individual and societal level has generated significant debate, which may contribute to, and be perpetuated by, a lack of a cohesive approach.

### 3.2.1 Diagnosis: A Key to Access Provision

One of the practical purposes of diagnosis is to facilitate access to evidence based provision, and in the UK, specialist educational support may be limited without a diagnosis (Bishop, 2014). The value of obtaining a diagnosis to access support is recognised amongst parents (Ebbels, 2014; Schuele and Hadley, 1999; Walsh, 2005). Lascelles (2013) anecdotally observed a parental preference for terms with medical grounding, given the perception that these will facilitate better access to provision. The perception of a need to pursue particular terminology within a diagnosis has amounted to an issue which Ebbels (2014) described as "diagnostic shopping".

The issue of pursuing a preferred diagnostic term to obtain support has received controversial attention in relation to developmental dyslexia. There is currently an absence of biomarkers to define a discrete diagnostic category (Elliott and Grigorenko, 2014; Snowling, 2014) and no substantial evidence for differences in response to intervention between children with low scores on reading assessments, and those with a dyslexia diagnosis (e.g. Snowling and Hulme, 2012; Toth and Siegel, 1994). Despite this, it has been observed that access to provision is improved for those diagnosed with "dyslexia", compared to those described as "poor readers" (Elliott and Grigorenko, 2014). Macdonald (2009) found that children in families experiencing financial disadvantage were more likely to be classified as "poor readers" or equivalent, partly due to the finding that families with greater financial privilege had better access to private assessments and diagnosis. It has therefore been argued that reading support is made universally available, thus minimising the link between diagnosis and provision (Elliott and Grigorenko, 2014).

To investigate the usefulness of diagnosis to parents, Betz and Steigerwald (2018) collated survey data from 304 parents, who were asked to imagine having concerns about their child's language. Parents ranked their preference for seven diagnostic items: "SLI", "DLD", "x", "Your child's language skills are below the language skills of other children this age but there is no known reason for this. Your child is developing normally in other areas", "SLI+", "DLD+" or "Dislingoria+". Across the sample, parents were generally indiscriminate about the terminology. However, obtaining a description of their child's needs without a diagnostic term resulted in concerns about the ability to access support, which is congruent with previous commentaries (i.e. Ebbels, 2014; Lascelles, 2013; Schuele and Hadley, 1999). Betz and Steigerwald (2018) concluded that such findings imply that debates regarding preferred terms are now eclipsed by the need to establish a diagnostic approach that supports parents in advocacy. However, research into parental experiences across wider learning difficulties has shown that different terms hold varying capacity to obtain support. In particular, nonspecific terms have been associated with poorer access to information and support groups, with consequential negative impacts on parental wellbeing (Howie-Davies and McKenzie, 2007; York et al., 1999).

### 3.2.2 Specific Categories in Practice

Given the significant academic impact of communication difficulties (Conti-Ramsden et al., 2001), much of the practice of SLTs takes place in educational settings. In a systematic review of 81 papers, Gallagher et al. (2019) compared perspectives from professionals across education and speech and language therapy on language-related diagnoses. Education literature contained more negative views regarding the use of diagnosis, and with considerable discussion of "deterministic thinking". Deterministic thinking is an observed phenomenon of adults projecting lowered expectations of academic performance if children are known to have a diagnosis that impacts learning (Florian and Black-Hawkins, 2011; Fuchs et al., 2010; Lebeer et al., 2012; Pameijer, 2006). Lauchlan and Boyle (2007) suggested that this effect is reduced with diagnoses that are associated with less stigma, and argued that using broader terms could reduce negative social perceptions.

Whilst there is little evidence to show which terms are used in practice, the understanding of terms across education and speech and language therapy has been examined. The Better Communication Research Programme (BCRP) is a collection of studies examining the academic impact of speech, language and communication needs (SLCN), with some review of terminology from the perspective of education staff. Roulstone et al. (2012b) interviewed 46 education professionals, including specialist teachers, educational psychologists and SLTs. Compared to SLTs, the education professionals tended to focus on individual needs, akin to a dimensional diagnostic approach. Dockrell and Lindsay (2001) found that teachers use a variety of ways to talk about children's communication needs, ranging in specificity to include general statements (e.g. "wasn't speaking properly"), descriptions (e.g. "pronunciation of words"), and specific terminology (e.g. "expressive and receptive difficulties"). Comparing broad terms to specific diagnoses, a survey of 204 education professionals and 146 SLTs revealed that the education professionals were most confident in their understanding of broader terms (Dockrell et al., 2017). Unlike the SLTs, they applied the broad term SLCN to children whose needs fit more specific categories. This might suggest differences between the professions in preferences for broad or specific diagnostic terms. Across studies, it was reported that SLTs did not use SLCN as a diagnosis *per se,* but as an overarching term to indicate a child's need for additional support (Dockrell et al., 2017; Dockrell et al., 2014; Roulstone et al., 2012b). The BCRP flagged that the lack of material in teacher training relating to SLCN may contribute to problems in the communication of specialist terminology (Dockrell and Lindsay, 2001; Sadler, 2005), which might also suggest that using broader terms was not a preference, but reflected limitations in knowledge of specialist concepts.

The perspectives of parents however indicate some benefits to the use of more specific diagnostic terms. Betz and Steigerwald (2018) investigated parental responses to receiving a description of their child's difficulties instead of a diagnosis. Having access to only the description was generally perceived to have negative consequences, including concerns that it would not be taken seriously by professionals outside of speech and language therapy. Parents were best able to explain their child's difficulties when both a description and a diagnosis were given. Howie-Davies and McKenzie (2007) used postal questionnaires to investigate perspectives of 47 parents of children with a learning disability, who had received either a specific or nonspecific diagnosis. Compared to the 23 parents of children who received more specific diagnoses (e.g. Down syndrome), the 24 parents of children with a nonspecific diagnosis experienced reduced access to support. Although participants were recruited from several locations, the sample size was small, and none of the children had primary speech, language or fluency diagnoses. Research into sensitive topics such as paediatric diagnosis is inherently limited by non-participation (Barratt et al., 2013) and whilst some voices are absent, any generalised conclusion about parental preferences should be made tentatively (Alderson, 2013).

### 3.2.3 Social Perceptions of Diagnosis

There are mixed reports across the literature of how diagnosis is perceived by individuals and construed within the wider social context. Rice et al. (1993) demonstrated that, when listening to language samples of children with and without SLI, adults made poorer judgements of their intelligence. There is some evidence to suggest that such deterministic thinking can be detrimental to educational outcomes (Gallagher et al., 2019). There is also research indicating that children with communication needs experience higher incidences of bullying due to associated barriers to social interaction (Anyanwu and Campbell, 2001; Simkin and Conti-Ramsden, 2009; Singer, 2005). Whilst stigma may be associated with diagnostic terms (Bishop, 2017), Riddick (2009) argued that negative views can occur in the absence of a diagnosis, and often precede it.

There have also been several reports of positive experiences associated with receiving a diagnosis. Research investigating the views of children and adults receiving a diagnosis of autism has documented benefits such as the identification of online communities and support groups (Bagatell, 2007; Silverman and Brosco, 2007). It is also reported that many adults choose to self-diagnose autism prior to pursuing formal assessment, as it provides a useful explanation (Lewis, 2016). Through interviews with nine parents, Russell and Norwich (2012) found that following their child’s autism diagnosis, many reconstructed their previously held ideas about autism to cast it in a more positive light.

Self-perceptions of some diagnoses have been well-documented, particularly autism, however, there is less evidence specifically related to speech, language or fluency. Dockrell et al. (2007) interviewed young people with a special educational need to attain their views. Within a sample of 51 young people in Year 11 or post-16 education with a specific speech or language diagnosis, 38 reported feeling positive about having their needs identified, whilst a quarter reported overall negative feelings which included worry, upset, frustration and shame, indicating that experiences of diagnosis are highly individual.

Diagnosis may have a considerable impact on families, and individuals may experience negative feelings about a focus on difficulties (Dockrell et al., 2007). Lauchlan and Boyle (2007) suggested that parents experience reduced confidence in supporting their children to manage their difficulties, as a result of diagnosis. Thomas et al. (2019) reported that SLTs in focus groups described examples of parents expressing reluctance to acknowledge that their child may have a language problem. Across four focus groups with 14 parents, Roulstone and Lindsay (2012b) found that, when asked to describe their child's needs, no parents used a diagnostic term for speech or language. This may suggest parental reluctance to use these terms, possibly related to social perceptions and stigma. However, for other developmental diagnoses, parents used terms such as Asperger's syndrome, dyslexia or "on the autistic spectrum". This may therefore reflect the reluctance of SLTs to use diagnostic terms. In interviews with 12 mothers in the US, Ash et al. (2020) reported that most children receiving speech and language therapy services did not receive a recognisable speech or language diagnosis. The children did however receive other diagnoses from other professionals (e.g. ADHD and Asperger's syndrome). If SLTs are not making diagnoses, this may explain the finding of Roulstone and Lindsay (2012b) that parents did not use these terms. This might suggest a general clinical hesitance to make diagnoses amongst SLTs compared to other professionals, but reasons for this are unclear.

It is possible that the social stigma associated with diagnoses may incur challenges in the process of delivering diagnostic information. Diagnoses such as autism have been found to be distressing for some parents to receive (Keenan et al., 2010), and this may be pronounced within cultures where there is a historic negative perception of diagnoses (Fox et al., 2017). In interviews with 17 parents, Russell and Norwich (2012) found that cultural background affected whether parents pursued or avoided a diagnosis of autism. The professional body for SLTs in the UK states that cultural sensitivity is an essential part of the role of an SLT (RCSLT, 2003), and the regulatory body state that SLTs must "adapt practice to meet the needs of different groups and individuals" (HCPC, 2018b). There is minimal evidence to show whether or how SLTs adapt diagnostic processes to ensure that their practice is culturally sensitive.

Research with families suggests that perceptions of diagnosis are not always negative, and may evolve beyond the clinical diagnostic interaction. Betz and Steigerwald (2018) presented parents with a range of terms for language diagnoses, and regardless of the terminology, diagnosis was not associated with parental shame. Questionnaires completed by 30 parents of children with hearing loss revealed that most rated initial receipt of the diagnosis as difficult, but important for obtaining information, coping and adjusting, and decision making processes at later stages (Stroebel and Swanepoel, 2014). It was also reported that delay in diagnosis was associated with a poorer understanding of their child's needs. There is evidence to suggest that a diagnosis can provide a sense of relief to families (Rabbitte et al., 2017; Stringer and Lozano, 2007), which is significant for clinicians to note as many families experience self-blame (Rannard et al., 2004). Ash et al. (2020) reported that many mothers felt responsible for their children's language difficulties. In anecdotal recognition of the profession's reluctance to diagnose, Schuele and Hadley (1999) outlined the potential benefits in a discursive article. Diagnosis was heralded as a means to address parental anxieties, discuss possible prognosis and provide reassurance.

Overall it is not clear whether diagnostic terms are stigmatising in themselves, although evidence from parents and children suggests that whilst diagnosis is important, the term used is of less significance (Betz and Steigerwald, 2018; Simkin and Conti-Ramsden, 2009). There was limited evidence pertaining to the diagnostic approach of SLTs, however, there is a clear indication that the delivery of diagnosis presents social dilemmas to both clinicians and families. Ash et al. (2020) reported that the lack of a diagnostic term had led mothers to later question whether the SLT had understood the nature of their child's problem, thereby fostering distrust in the therapeutic relationship. This indicates that the delivery of diagnosis to parents is a highly important aspect of clinical practice.

## 3.3 Clinical Decision Making in Diagnostic Procedures

In speech and language therapy, the use of clinical judgement is integral to case management. To guide SLTs in clinical judgement, RCSLT (2005) provides clinical guidelines. These are intended to support clinicians with interpreting the evidence base and provide recommendations for clinical decisions. Speech, language and fluency difficulties present diversely, and Chapter 2 indicated that the evidence base to support diagnostic categories is relatively weak. This section considers the issues that pertain to engagement with theory and evidence in relation to diagnostic decision making in practice.

### 3.3.1 Current Guidelines and Clinical Judgement

Literature from studies based in the US indicates that the diagnostic process is driven by clinical judgement, practical constraints and localised guidelines. For SLTs based in US schools, clinical decisions are often guided by federal and state education law; typically this is the classification provided in the IDEA system for educational diagnoses (Hoffman et al., 2013; Individuals with Disabilities Act, 2004). However, Giangreco et al. (2010) reported that the role of the SLT in diagnosis is not well defined within the IDEA framework. In terms of state guidance, the UK education system does not have an equivocal body for sourcing and determining specialist resources. The RCSLT clinical guidelines for preschool and school-age children provide limited guidance on the diagnostic process, stating that "*The Speech & Language Therapist should provide a working "diagnosis" concerning the child's communication*" (RCSLT, 2005 p. 421). The lack of guidance may reflect an expectation that clinical judgement plays a dominant role in this process. This is perhaps due to the level of heterogeneity amongst clients, which arguably requires high levels of clinical flexibility and autonomy.

Clinical judgement is, by definition, a subjective process. One of the recommendations of the CATALISE project was for clinicians to use judgement in combination with assessment scores in order to diagnose and dictate intervention, reflecting a shift away from strict quantitative diagnostic cut off scores (Bishop et al., 2016). This means that clinicians have high autonomy in decision making regarding diagnosis and intervention, based on their experience, knowledge of the evidence base, and the specific circumstances of the client. It has been speculated that weak evidence for diagnostic categories can cause hesitancy in SLTs in making diagnoses (Schuele and Hadley, 1999). The consistency of diagnosis is therefore potentially compounded by the reliability of the decisions taken by SLTs, and their confidence in making diagnoses.

There is limited evidence to indicate the extent that clinical guidelines influence the decisions taken by individual clinicians. In a discursive article, Kamhi (1995) summarised the major findings of a series of studies of SLTs and presented a working model of clinical expertise, reviewing influences to the clinical decision making process. The engagement of SLTs in training was considered to have a substantive impact on practice, particularly in relation to openness to implementing change. Kamhi (1995) speculated that accepting changes from external sources is particularly difficult for clinicians to implement, and adaptations may take a long time without sufficient guidance. It was suggested that SLTs are more proficient to implement clinician-initiated changes in practice where a localised need is identified. This is particularly pertinent as the recent CATALISE project made several recommendations for change. Whilst the ideas presented by Kamhi (1995) were speculative and potentially outdated, it suggests that the extent of training opportunities following the CATALISE project and the perception of a need for change may have influenced the clinical uptake of recommendations.

In broad clinical guidelines for paediatric SLTs, such as those outlined by RCSLT (2005), linear processes for assessing and making speech, language and fluency diagnoses, are not clearly defined. With regard to the assessment of language, RCSLT state that:

> *"A wide range of assessment procedures are available and the Speech & Language Therapist should select from these, bearing in mind the child's cognitive, physical and perceptual abilities. A combination of formal and informal procedures will be used to assess the impact of any difficulties [in the comprehension and expression of language, including grammar and vocabulary] on the child's learning and socialisation" (Taylor-Goh, 2005 p. 27).*

Similarly, the role of the SLT in the process is not precisely outlined. Several articles identified by this review suggested that in the US, workplaces set policies for eligibility criteria which might be interpreted as guidelines for practice in the absence of guidance from the profession (Fulcher-Rood et al., 2018; Selin et al., 2019). In the UK, SLTs sometimes work in multidisciplinary teams to determine diagnoses and very often collaborate with other professionals as part of overall service provision (Taylor-Goh, 2005). Selin et al. (2019) postulated that, as a result of multidisciplinary working, SLTs are not autonomous in decision making, which is potentially detrimental to clients. The professional body for SLTs in the US took a survey of members, and only 20% reported feeling prepared to lead multidisciplinary teams (ASHA, 2019). In the UK, it is usually the responsibility of the SLT to make primary speech, language and fluency diagnoses (RCSLT, 2005), and multidisciplinary working is diminishing due to funding restrictions (Hancock, 2019). Both issues arguably highlight a need for clear professional guidance to define the role of the SLT and outline clear diagnostic procedures.

### 3.3.2 Standardised Assessment Tools

Assessment is a typical component of diagnostic processes, providing a means for clinicians to determine how the behaviours of clients align with diagnostic criteria. Some assessments are standardised, meaning that they have been validated to ensure that scoring is consistent with other assessment tools (Darley et al., 1978; Weiner and Hoock, 1973). This maximises the reliability of outcomes which is a high priority in research, however there is evidence to suggest divergent priorities for assessments between research and practice. It has been shown that clinically administered assessments are regularly used by SLTs to inform diagnostic decisions in both the UK (Thomas et al., 2019) and the US (Selin et al., 2019). A survey of 216 US-based SLTs revealed that assessments were most often used to determine eligibility for services and guide decisions related to intervention (Huang et al., 1997). Selin et al. (2019) conducted a survey of 563 US-based SLTs to investigate the decisions involved in conducting assessments for specific language impairment (SLI). Participants reported that the main purpose of using assessments in their practice was to determine severity markers, such as "mild", "moderate" or "severe", rather than produce the diagnosis. This suggests a clinical alignment with a dimensional approach to diagnosis.

Whilst it has been shown that the majority of SLTs in the US use standardised assessments, it has also been found that they may not be applied as intended due to practical constraints (Betz et al., 2013; Fulcher-Rood et al., 2018; Huang et al., 1997). These include problems accessing up to date assessments, the extent of time required to use and interpret full assessments, and discrepancies between assessment results and service criteria (Selin et al., 2019). Huang et al. (1997) found that only 20% of 216 SLTs perceived most standardised assessments to be satisfactory for clinical use, and most considered that the results did not provide sufficient information to guide intervention. It has been identified that many SLTs use a combination of incomplete assessments and supplementary informal measures, with 59.1% of a sample of 231 Australian SLTs (Mcleod and Baker, 2014) and 36% of a sample of 85 Dutch SLTs (Priester et al., 2009) reporting the use of informal or self-devised measures. To investigate this, Limbrick et al. (2013) conducted a thematic analysis of journal entries from eight SLTs who created their own assessments, which revealed that the initial need was provoked by the impracticality of current standardised tools for clinical work. This has implications both for reliability and consistency across SLTs and implies a significant discrepancy between the use of assessments in research and practice.

In addition to the practical constraints of clinical settings, research in the US has shown that many SLTs encounter difficulty with interpreting the evidence base (McCurtin and Roddam, 2012; Mullen, 2005) which may affect diagnostic decisions. Betz et al. (2013) conducted a survey of 364 SLTs and found that the selection of assessments was typically based on factors such as familiarity with tools and ease of use rather than their psychometric properties. Fulcher-Rood et al. (2018) found that SLTs did not reference external scientific evidence as an influential factor in decision making, suggesting that engagement with research might influence diagnostic processes and outcomes. Following the CATALISE recommendations, Thomas et al. (2019) investigated the experiences of SLTs in the UK in relation to assessments for developmental language disorder (DLD). The selection of assessment tools depended largely on the SLTs' previous experiences and familiarity with tools generally influenced preference. Records and Tomblin (1994) obtained a similar finding amongst 27 SLTs in the US, with the accuracy of interpretation of fictitious standardised assessment scores being most highly associated with the clinician’s level of familiarity with the test.

In addition, both Thomas et al. (2019) and Fulcher-Rood et al. (2018) found that, due to the complex nature of clients’ presentation, targeted assessments were often considered inadequate in isolation. Consequently, participants in both studies used a mixture of incomplete assessments in practice, both for diagnostic purposes and for planning intervention. Assessments are often aligned with very specific areas of measurement (Rescorla, 2009; Skuse et al., 2004), whilst evidence emerging across studies alluded to a clinical need to capture features across developmental processes, supporting the appropriateness of a dimensional approach in practice. Overall, findings across studies imply that the selection of assessments is not necessarily evidence based. The reduction in reliability and validity may result in inconsistent diagnoses (Spaulding et al., 2012) which may cause emotional harm to families. The lack of standardisation may also result in an inequitable distribution of service provision (Betz et al., 2013; Limbrick et al., 2013).

### 3.3.3 Service Criteria

In the US, where insurance providers often require a diagnosis prior to releasing funding for provision, service criteria are thought to be a significant factor in diagnostic decisions made by SLTs (Murza and Ehren, 2020). When investigating the diagnostic decisions of US SLTs, Selin et al. (2019) used fictitious case vignettes in order to remove the influence of workplace confounding factors. The SLTs' diagnostic inferences of vignettes were neither congruent with research cut off scores for diagnosis, nor reported eligibility criteria set by schools for access to provision. In five out of the six vignettes, a third of survey participants disclosed that they would recommend services to the cases described (83 % of cases), yet a previous finding of Tomblin et al. (1997) showed that in practice only 29% of children who meet diagnostic criteria are identified by preschool staff. Comparing these percentages, Selin et al. (2019) suggested that fewer children are diagnosed in actual practice than in vignettes due to external influences such as setting, policies, time constraints and caseload prioritisation. However, the time elapsed between studies should be noted, as policies and diagnostic criteria change over time. Selin et al. (2019) found that the SLTs rated service criteria as highly influential to their diagnostic practice, and this study contributes to increasing evidence that caseload prioritisation and funding impact diagnostic decisions. In interviews with 39 US-based SLTs, Fulcher-Rood et al. (2018) also found that awareness of resource distribution was highly prioritised in diagnostic decision making. It was found that local guidelines and policies of individual work settings were more influential to their diagnostic practice than classification systems (Fulcher-Rood et al., 2018). Workplace guidelines were generally perceived as mandatory policies, which resulted in deviance from evidence based practice and, similar to the findings of Betz et al. (2013), psychometric qualities of assessment tools were not influential to test selection. Such findings raise significant issues for the profession, suggesting that diagnosis is dictated heavily by policies that are intended to guide resource distribution. Not only is this not evidence based, but it reduces opportunities for families to advocate for more services to be commissioned. In addition, it suggests that there may be geographical inconsistency, with potential consequences for parity in diagnosis in areas with disproportionate resource distribution, as suggested by Elliott and Grigorenko (2014). However, it is pertinent to note that such research has not been replicated in the UK, with considerable differences in funding and distribution of resources incurred by a publicly funded system.

In UK clinical guidelines such as those provided by RCSLT (2005), there is limited guidance provided regarding the interpretation of assessment scores. In relation to the diagnosis of DLD, there is no overall guidance regarding the interpretation of thresholds for provision set by commissioning bodies or service criteria. If criteria are disparate across services, the reliance on clinical judgement and self-devised assessments may conceivably reduce the consistency of diagnostic practice. It is apparent from the available evidence that research recommendations for the interpretation of criteria do not match the practical demands of clinical practice (e.g. Tomblin et al., 1997). Clinical decision making might be subject to the selection of assessment tools (Betz et al., 2013) and the capricious nature of the workplace (Fulcher-Rood et al., 2018; Selin et al., 2019). This suggests that there may be issues unique to clinical practice that impede diagnostic consistency. Despite the lack of evidence pertaining to the UK, overall there is an indication that workplaces and policies may influence diagnostic practice. There is also limited guidance to support a cohesive professional approach to diagnosis. This is especially pertinent given the issues identified in relation to parity of access to provision, and the profound value of diagnosis to clients and their families. This review has indicated key areas to investigate with regard to diagnostic practice in the current study, including potential factors that may be associated with a lack of consistency. These include the geographical region of clinicians, their access to training and research, and setting of practice, which will be incorporated in the methodological design which is outlined in Chapter 4.

## 3.4 Summary of Review Findings

The current knowledge of terminology use and diagnostic processes in paediatric speech and language therapy highlights the complexity of both areas and demonstrates a multitude of competing perspectives from research in speech and language therapy and education, SLTs and families. Significant challenges have been raised in relation to the consistency of terminology usage across research and practice, and this review has revealed areas of overlapping and contrasting issues which appear to contribute to the problems arising. It is evident that inconsistency in terminology is considered obstructive to research and clinical practice, but with divergent implications. For research, locating studies is compromised by the vast spectrum of terminology, and there is reduced funding for studies. In clinical areas, there is less evidence for the consequences of variation, but low levels of public awareness may restrict advocacy efforts. Across the articles reviewed, many authors considered that the challenges involved in classification - both over time and across research areas - have resulted in numerous terms which refer to the same (or highly similar) diagnostic entities.

There is a multitude of perspectives on diagnostic practice in relation to speech, language and fluency, with some scholarly discussion on the appropriateness of diagnosis itself in clinical practice, particularly in the educational context. There are concerns that diagnosis is associated with social stigma (Bishop, 2017; Lauchlan and Boyle, 2007), which may have negative consequences for children and families (e.g. Fox et al., 2017; Roulstone and Lindsay, 2012b). As stated by Snowling (2012), debates regarding the specificity of terms and whether developmental diagnoses should be defined categorically or dimensionally have been rife across the literature (e.g. Sun and Wallach, 2014), and Lauchlan and Boyle (2007) argue that this has resulted in the introduction of additional terms. This potentially increases the variation in terminology, thereby plausibly negating advantages of diagnosis such as awareness-raising (Kamhi, 2004), lobbying efforts (Walsh, 2005), locating evidence (Leonard, 2020), and accruing research funding (Bishop, 2010b). There is an argument that descriptive terms are more useful than categorical diagnoses (Dockrell et al., 2017), yet some literature has shown that parents value specific terminology for information seeking (Betz and Steigerwald, 2018; Howie-Davies and McKenzie, 2007; Stroebel and Swanepoel, 2014). Schuele and Hadley (1999) suggested that SLTs avoid using terms that may cause upset to parents, instead opting for a descriptive approach, which has been shown to be the least helpful to parents (Betz and Steigerwald, 2018). The perspectives of different groups appear divergent, yet it is important that diagnoses and the associated terminology serve all invested parties, as ultimately all share the common goal of improving outcomes for children who may require support with speech, language and fluency.

Diagnostic approaches appear to vary across settings dependant on the purpose (Walsh, 2005), and there has been some recent work to identify potential influential factors. Although the role of the SLT in diagnosis is not clearly defined, there have been some studies conducted in the US that investigated how SLTs approach diagnosis. Fulcher-Rood et al. (2018) found that diagnostic decisions were primarily driven by policies set at federal, state and district levels and guided by the results from standardised assessments. Selin et al. (2019) obtained a similar finding, with SLTs making more diagnoses in vignettes based on standardised assessment scores than in practice which is imbued with constraints, implying that diagnosis is dependent on capacity and protocols of services. Studies have also shown the use of assessment in clinical practice is often unfeasible in clinical practice, resulting in inconsistent use of tools, many of which are self-devised (Betz et al., 2013; Limbrick et al., 2013). Whilst most of this research has taken place in the US, Thomas et al. (2019) investigated UK based SLTs' experiences of clinical assessment of DLD, also finding that workplace characteristics were influential in diagnostic practice. Published assessments tools were perceived to be insufficient to capture broad-ranging needs, resulting in the use of informal measures. This suggests that there may be inconsistency in UK clinical practice which warrants addressing, due to the risk of disparity and the unknown impact on clients and their families.

There has been limited research into the diagnostic approach of SLTs, particularly in the UK, but it is suggested that this may be influential to their terminology usage. Several speculative theories account for causes of variation, yet there is currently minimal evidence to show which terms are used in practice. Whilst there are clear factors that motivate the profession to improve consistency, evidence from the UK clinical perspective is currently missing. Arguably, knowledge of the terms that are used clinically and the underpinning reasons is required in order to evaluate terminological consistency, understand the clinical reality of the issue and work towards a sustainable resolution.

## 3.5 Research Implications for Current Study

This review of the extant literature has illuminated the complexity of the process of diagnosis in relation to paediatric speech, language and fluency. The majority of studies have been conducted in the US, and there is minimal evidence to show how diagnosis is conducted in UK practice. Terminology use may be dependent on a multitude of factors that have not been fully appraised in the UK clinical context. Whilst terminology use has been considered within research, there are features of the diagnostic process which are unique to clinical practice. In the UK education system and the NHS, a diagnosis is often used to facilitate access to specialist support, and therefore research that can highlight the limitations and seek to inform change may have real societal benefits.

There has not yet been a full investigation into the causal factors that underlie terminology use. There is also no empirical evidence to show what terms are used by SLTs in clinical practice. Therefore it is not possible to truly show whether there was inconsistency in language diagnoses prior to the CATALISE project, or the impact of such a drive to reduce variation. Identifying the terminology used would demonstrate how issues derived from clinical practice align with those affecting research and contextualise the challenges occurring. Investigating the rationale of SLTs underpinning their use of terminology would provide direction for supporting clinicians across settings in their diagnostic practice.

The ultimate aim of this research is to improve the outcomes for clients and their families. Several articles highlighted that SLTs are a pivotal source in communicating diagnostic information between services, with clients, and other professionals and thus influence consistency (Kamhi, 2005; Schuele and Hadley, 1999; Walsh, 2005; Walsh, 2006). This type of problem is inherently social and demands an exploration of perspectives. Whilst it is important to seek the views of all stakeholders in the diagnostic process, it is first necessary to gain an in depth evaluation of the practical issues. For this reason, seeking the experiential reality of SLTs has been prioritised within the scope of the current study. This review has highlighted significant gaps in knowledge, and the need for empirical evidence regarding the clinical reality of diagnosis and terminology usage. This, in combination with the theoretical underpinnings of this research, contributed to the development of three research questions, which will be presented alongside the methodological approach employed to address them in the next chapter.

# CHAPTER 4: METHODOLOGY

This chapter outlines the methodological approach of the current study, tying the theoretical perspective which guided the research to the application and development of methods. Research paradigms are discussed to provide the historical context for the philosophical approach underpinning the research. Dialectical Critical Realism (DCR), a meta-theoretical stance, provided the framework for developing the research design and interpretation of a sequential explanatory mixed methods research (MMR) design. Using key principles from both DCR and MMR, a survey and semi-structured interviews were developed to address the three research questions. Design and procedural stages for both the quantitative and qualitative phases including ethical considerations, participant recruitment, data collection, and data handling are then outlined. The chapter ends with a reflective summary of design and execution processes for both phases of the research, considering the challenges and successes of the methodological approach and methods. This chapter shows how the results presented in subsequent chapters were attained and outlines the methodological contribution to the research outcomes.

## 4.1 Philosophical Approach to Research

Research philosophies can be considered to exist on a spectrum, polarised by positivism and interpretivism, which are diametrically opposed in the conceptualisation of reality (Gage, 1989). This has implications for the practical execution of research, with quantitative methods generally associated with a positivist approach, and qualitative methods with interpretivism (Creswell, 2003). Positivism supports universality, which is the idea that facts exist independent of the "observer" and can be progressively discovered (Benton, 1977). Traditionally, positivism is an approach to research that objectively sets apart items of research from the social context (Macionis and Gerber, 2010). Data is typically regarded to be stable and independent of the observer, and a common goal is to produce replicable findings in order to construct reliable predictions about causes and effects. In contrast, interpretivism regards differences in perception as legitimate truths, with no objective singular reality. An interpretivist approach to research recognises knowledge as socially constructed (Schwandt, 1994) and research often seeks to explain outcomes and actions through accounts of actors' motives and beliefs (Hay, 2011). The generalisation of findings in pursuit of establishing causation and rules is not prioritised, and it is accepted that there exist "multiple, socially constructed realities ungoverned by natural laws, causal or otherwise" (Guba and Lincoln, 1989 p. 86). Events are constructed through language, hermeneutics and perceptions and are therefore isolated in specific contexts, with few inherent features (Alderson, 2013). Neither philosophical perspective is adequate to support the research aim, which assumes the possibility of commonalities in addition to a socially constructed element to reality.

Post-positivism emerged as a rejection of this dichotomy, drawing together the least polarising characteristics of each worldview (Bryman, 2008). This has informed the critical realist perspective, which is an approach to social science that draws upon merits of both approaches, valuing the insight to the generative mechanisms of social phenomena generated by both statistical measures and qualitative discourse (Bhaskar, 2008). Critical realism (CR) emerged from the writings of the philosopher Roy Bhaskar (e.g. Bhaskar, 1975), seeking an alternative to the "ambiguous and often confusing models of scientific methodology" (Bagley et al., 2016 p. 27). CR is not a methodology *per se* but a meta-theoretical position intended to guide empirical social research (Archer et al., 2016). CR rejects the confines of a positivist prioritisation of quantitative engagement with expansive data (McEvoy and Richards, 2006) and also acknowledges limitations of interpretivist research which neglects the possibility of causality in social research (McEvoy and Richards, 2006). CR also opposes the traditional polarisation of natural and social sciences, recognising that both seek to identify invisible causes. It is widely accepted in CR that the purpose of social research is to identify generative mechanisms for social phenomena, thus setting it apart from other worldviews.

Bhaskar (1975) described "transcendental realism", which acknowledges the irregularity of social contexts, but argues that it is feasible to identify causes of observable phenomena through research. Theories with predictable outcomes that are typically seen in natural sciences may not seem applicable in complex and fluctuating social contexts; however, that neglects the influence of governing social structures (such as race and gender) on social outcomes. Methodologically, CR is a combination of three theoretical premises: *ontological realism*, the view that reality exists independent of human knowledge; *epistemological relativism*, an appreciation that all methods hold merits and flaws, and no one method is superior in attaining knowledge; and *judgemental rationality* which places emphasis on the use of logic to guide the selection of effective research methods (Wikgren, 2005).

Dialectical critical realism (DCR) is an extension of CR that emerged from the later writings of Roy Bhaskar (Bhaskar, 2008). DCR separates social structures, which are predictable and long-lasting, from human agency. Both structures and agents have tendencies that can be observed, and useful predictions of trends can be an outcome of social science research (Alderson, 2013). One of the core principles of DCR which differentiates it from CR is the value of research as a precursor for social change (Alderson, 2015; Bagley et al., 2016; Norrie, 2009). Research is conducted in a way that maintains strong links to social problems, with the aim of yielding benefits for real individuals and communities. DCR is used to support this research due to the social nature of the presenting problem, the extensive links to a practical field, and its contribution to a field within an active change process towards revising terminology use.

## 4.2 12 Principles from Dialectical Critical Realism

A DCR stance guided the design and interpretation of this research, which is rooted in social science. Alderson (2013) outlines 12 core principles of DCR, adapted from the work of Bhaskar (2008) which were integrated to various extents to support the design, analysis and interpretation of this research. These are introduced in the sections that follow with accompanying definitions and an overview of the way that each concept features within the current study. Most are included in original CR work. In later writings on DCR, Bhaskar (2008) introduced three newer concepts: Emergence, Absence and Change Processes, and MELD, denoted by (*):

1. Being and Knowing
2. Transitive and Intransitive Objects
3. Semiotic Triangle
4. Natural Necessity
5. Natural Necessity in Social Science
6. Natural Necessity and Retroduction
7. Open and Closed Systems
8. $\text{Power}_1$ and $\text{Power}_2$
9. Emergence*
10. Four Planar Social Being
11. Absence and Change Processes*
12. MELD (moment, edge, level, dimension)*

1. **Being and Knowing -** Across research paradigms there is an appreciation that epistemology and ontology are symbiotically related, but the distinction between the reality of being and knowledge about being is central to DCR. The false assumption that ontological events and epistemic knowledge are interchangeable, is referred to as "epistemic fallacy" (Bhaskar, 1975). Valid research must incorporate their essential differences, with an understanding that knowledge of reality is accessed via an empirical human lens that is clouded by historical, societal and experiential influences (Raduescu and Vessey, 2009).

2. **Transitive and Intransitive Objects** – Whilst ontological items are deemed stable and unchanging (*intransitive)*, knowledge undergoes rapid shifts and is therefore *transitive.* An example of this differentiation is the intransitive existence of gravity which remains stable in comparison to the continuous evolution of transitive theories to explain the phenomenon of falling objects. However, this does not discount research as futile, as social change is ultimately evoked by an increasing understanding of reality (Anderson, 2000). The objects of this research are social, and therefore exist in a state of constant flux, but are considered intransitive entities relative to the research outcomes which constitute transitive knowledge.

3. **Semiotic Triangle** – The role of language is incorporated in avoiding the epistemic fallacy. A subset of the linguistic field of semiotics (de Saussure, 1998) divides ontological items into “signified” concepts and their “signifiers” (the ways of referring to the signified concepts, for example through language). Bhaskar (1975) considered signified concepts to refer only to knowledge, and extended semiotic theory to include "referent" ontological items, thus avoiding the epistemic fallacy. This is adhered to in the current study, by separating the language of participants (signifiers) from their perceptions of reality (signified), from real events (referent). Similarly, diagnostic terminology (signifier) is separate from the human concept of diagnosis (signified), which is not interchangeable with the reality of the client's communication needs (referent), as shown in Figure 4-1. The purpose of the semiotic triangle is to remind researchers that the language used to refer to concepts is not exclusively bound to abstract ideas. Ultimately, the terminology refers back to real clients and their communicative needs which reinforces the notion that DCR research is conducted for societal benefits (Bhaskar, 2008).

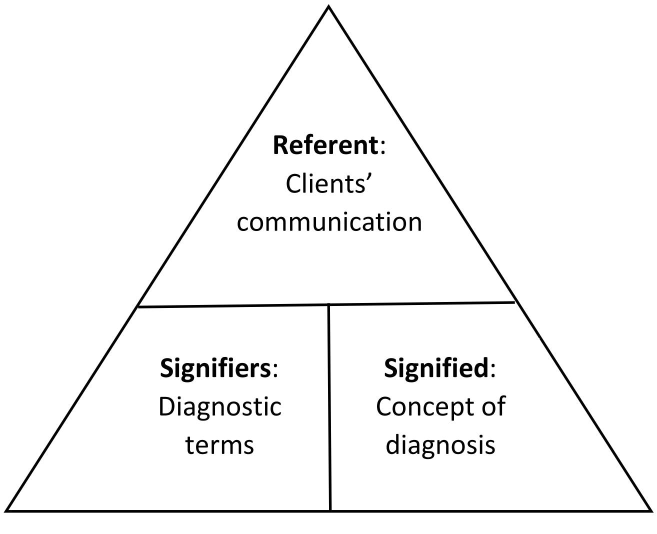
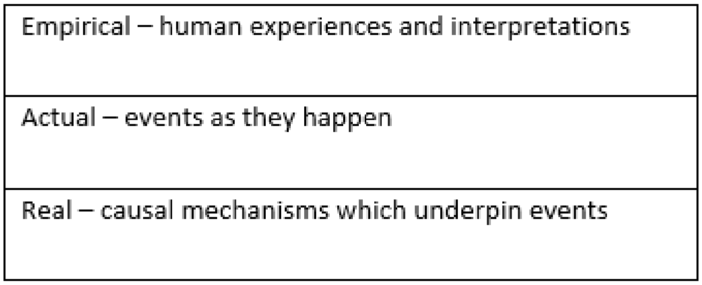


*Figure 4-1 Reproduction of elements of Bhaskar's semiotic triangle in reference to the current study*

4. **Natural Necessity** – DCR holds the view that ontology is stratified as three dimensions: empirical, actual and real, as shown in Figure 4-2:



| |
|---|
| Empirical – human experiences and interpretations |
| Actual – events as they happen |
| Real – causal mechanisms which underpin events |

*Figure 4-2 Stratification of reality (Bhaskar, 1975)*

All three levels are considered with equal importance for research. The "empirical" level accounts for human experiences and perceptions of events. An example of this in the current study is SLTs' experiences of diagnosis. The "actual" level of reality accounts for ontological events, for example, the process of diagnosis as it occurs in clinical practice. These are reported through the empirical lenses of participants, but they still take place as *actual* events. At the "real" level are generative mechanisms that interact to produce the observable *actual* events, such as social contexts or power dynamics. These are often also termed "generative mechanisms" in social research due to the rarity of simple cause-and-effect relationships. Pure positivism solely acknowledges actual and empirical events as real, whilst a strong interpretivist view only regards empirical reality. This research appreciates the existence of reality at all three levels and seeks to identify mechanisms that contribute to the diagnostic practice of SLTs.

5. **Natural Necessity in Social Science –** DCR encourages researchers to acknowledge the stratification of reality in social research by not reducing human agency to observable

behaviour in a fallacy termed “flat actualism”. The relations between societal structures and agency are considered integral features of identifying causality, as structures act as mechanisms that underpin behaviour (Cohen, 1989 p. 131). The theory of v*oluntarism* suggests that agents are creators of structures in enforcing moral rules that manifest in social contexts (Giddens, 1984, 21). In contrast, *determinism* upholds the view that structures govern the actions and experiences of individuals. DCR neither fully supports voluntarism nor determinism, focusing instead on the interactions between open systems of competing independent structures and agents within them. Whilst social structures precede and outlast individuals, agents can make incremental changes in structures. This research investigates how SLTs operate as agents within systems governed by multiple structures such as healthcare and education, disability theories, children's rights and a culture that stigmatises disability.

6. **Natural Necessity and Retroduction** – Reasoning is a fundamental prerequisite for knowledge development through research. Danermark et al. (2002) describe four modes of inference: deduction, induction, abduction, and retroduction. Deductive reasoning uses data to falsify hypotheses, whilst inductive reasoning draws conclusions from the data itself. Both are limited to the inference of empirical observations. Abductive inference enables general patterns from observation to be described. Retroduction seeks to derive the underlying structures of the empirically observed and is thus most closely aligned with DCR (Bhaskar, 1998).

7. **Open and Closed Systems** – DCR differentiates the pursuit of causality from simplistic cause and effect relationships, termed "closed systems". Social environments are described as

"open systems", in which multiple - often competing - factors interact to produce an outcome. This is also observed in natural sciences; such as the interaction of gravity and air currents that contradict and interact to produce the upward spiralling of falling leaves.

8. **Power$_1$ and Power$_2$** - Bhaskar (1975) framed governing social powers as either creative, positive and transformative (*power$_1$*) which empowers individuals and resists social inequality, or oppressive and destructive (*power$_2$*), causing injustice in society. This provides a means to recognise the impact of social powers on individuals and understand the contexts in which they operate. In this study, power$_1$ might be observed in the individual and collaborative actions of SLTs and the profession to improve outcomes for clients, whilst the negative perceptions of diagnoses in society (as discussed in Chapter 3) are an example of power$_2$.

9. **Emergence* -** DCR uses emergence to describe the relationships of independent properties in social contexts that interact to produce observable phenomena. For example, a mole of water is emergent from atoms of hydrogen and oxygen, but has unique properties and is therefore “more than the sum of its parts” (Pratten, 2013 p. 256). In the context of this research, the current study aims to identify the unique underlying properties that interact to produce the emergent diagnostic actions of SLTs.

10. **Four Planar Social Being** – Human agents relate at multiple levels, and Bhaskar (2008) presents the *Four Planar Social Being* as a means of categorising human interactions and engagement with social structures at global, local and personal levels. The model is comprised of four distinct means of interacting with the social world, and its application in

research is advocated to support a deeper and more holistic analysis of social contexts. All four planes are incorporated within the design of the methods in the current study.

i. *Material relations* refer to interactions with the physical environment, such as the clinical setting in which SLTs practice.

ii. *Broader social relations* are the governing elements of society that impact individuals. The literature review indicated divergent overarching perspectives of diagnosis from education and health fields.

iii. *Interpersonal relationships* are the interactions that occur between people. SLTs work with many groups and individuals and need to communicate diagnostic information. The fragmentation of expert knowledge may present different dynamics during interactions with parents, colleagues and professional groups.

iv. *Inner being* represents subjective views about values, life and society. The terminology preferences of SLTs and their personal views related to diagnosis may be relevant in this study.

11. **Absence and Change Processes*** - DCR views research as part of a wider change process in building knowledge of being (Bagley et al., 2016). Researchers are encouraged to acknowledge the role of absence within, and particularly prior to social change. The current study is conducted as part of a wider movement towards change in speech and language therapy with regard to the consistency of terminology, which was initiated in response to the absence of an agreed term for language diagnoses. Alderson (2016b p. 166) describes absence as “the crucial empty physical, social and mental space that enables movement”, which is identified prior to the research. This study has been designed in response to the

absence of knowledge regarding the clinical perspective of diagnosis, which has arguably presented a barrier within the wider change process.

12. **MELD (moment, edge, level, dimension)*** - The MELD framework, as presented by Alderson (2013 p 35-46), provides a series of stages that guide researchers to identify change mechanisms in social contexts. MELD facilitates an examination of the contexts in which the precursory need for research occurred, and how transformative change might be achieved. Sociological phenomena exist in open systems subject to constant flux and change, and using MELD can support the observation of patterns captured at a single point in time. The outline of MELD and its application to this research is as follows:

    *1M – Moment.* This represents the point at which the researcher enters the field. The aim of 1M is to seek information about the context that elicited the research need without imposing preconceived views or values. This manifested through an informal recognition of problems with terminology within the profession from clinical anecdotes and research reports.

    *2E – Edge.* At this stage, a problem is defined and there is a need to generate data. In the current study, the research need was derived from a demand for terminological consistency within the profession, and an absence of knowledge about clinical diagnostic processes or terminology usage. Methods for addressing the research problem were devised.

    *3L – Level.* A holistic analysis of data is conducted to produce knowledge that reflects the context from which they were derived. Contexts are not just described in theoretical terms, but clear links are made to the setting from which they emerged; in this case, clinical and educational practice.

*4D – Dimensions.* The final stage focuses on critical reflection and social change. One of the distinctive elements of DCR is the emphasis on researchers considering the practical application of knowledge generation (Bagley et al., 2016). The current study aims to support the profession by obtaining a more informed understanding of terminology use and diagnosis. The findings can be linked back to practice in a meaningful way by producing practical or theoretical recommendations.

## 4.3 Development of Research Questions

The theoretical scaffolding offered by DCR, with the focus on researching and understanding the changes and complexity of the social world, supports the demands of the presenting research problem. The overall aim of conducting this work is to investigate the use of diagnostic terminology in various social contexts and the approaches to diagnosis taken by SLTs in current practice. The research questions were devised in recognition of the research need, directed by the literature review, and supported by DCR concepts, with a focus on capturing elements of reality at each level:

1. What terminology is used by paediatric SLTs in the UK to denote primary speech, language and fluency diagnoses?
2. What factors underpin the diagnostic terminology used by paediatric SLTs in the UK?
3. How do paediatric SLTs approach making diagnoses in practice?

By addressing research question 1, the study seeks to provide empirical evidence that has been missing from debates about terminology: the terms used by SLTs in their clinical practice in the UK. This aim demands a quantitative approach that can produce broad data, offering the possibility of generalisation beyond a research sample. Research question 2 then seeks to identify the generative mechanisms that underpin terminology use. From a DCR stance, generative mechanisms are the underlying social factors that potentially contribute to a clinician's use of terminology. SLTs make diagnoses in practice, and investigating the influence of factors related to each clinician may reveal issues that affect their use of terminology. This can be achieved quantitatively, by measuring the strength of associations, and qualitatively, by attaining the empirical reality of SLTs as they perceive it (e.g. through interviews). Both approaches hold relative strengths; quantitative methods offer broad data with relatively large numbers of data points, whereas qualitative methods are suited to capture the complex concepts and relationships that manifest in the open systems of the social world (McEvoy and Richards, 2006). A qualitative approach suits the empirical focus of research question 3, through the attainment of rich explanatory data.  The use of a pluralistic methodology, where such a research design is pragmatically appropriate, is advocated in DCR as “judgemental rationality”.  Employing both quantitative and qualitative approaches evokes practical and theoretical challenges (Creswell and Plano Clark, 2017), which are discussed from a methodological perspective in the following section.

## 4.4 Mixed Methods Research

Mixed methods research (MMR) is defined and interpreted in a variety of ways (Johnson and Onwuegbuzie, 2004), but ultimately includes the combination and integration of both qualitative and quantitative methods (Creswell, 2003).  As an approach, many argue that the unique principles of MMR warrant its status as a methodology beyond merely an overlap of quantitative and qualitative approaches (Cameron, 2011; Creswell and Plano Clark, 2017; Johnson and Onwuegbuzie, 2004) and is sometimes referred to as the third methodological paradigm (Tashakkori and Teddlie, 2003). There has been a growth of interest in the use of MMR across health and social disciplines, including speech and language therapy (Glogowska, 2015).  Combining quantitative and qualitative approaches offers means to counterbalance the limitations of singular research methods. There are however significant challenges, including the need for extensive data collection and the processing of multiple datasets in concordance with research underpinned by vastly different research approaches and worldviews. DCR rejects the notion of conflict between ontological and epistemological positions inherently associated with qualitative and quantitative research, observing instead the strengths and limitations of both. Therefore, it is an ideal theoretical perspective to underpin an MMR study, to obviate the potential tensions inherent in MMR.  To address the research questions of this study, a mixed methods design has been devised under the guise of DCR.

### 4.4.1 Principles of Mixed Method Research and Integration with DCR

Creswell (2003 p. 209) outlines the core characteristics of MMR which define it as a discrete approach. Guided by research questions, qualitative and quantitative data must be concurrently or sequentially collected and interpreted, and then integrated. It is emphasised that MMR is not the concomitant use of both approaches but must involve some element of mixing (Hanson et al., 2005), and data from each method must build on the other. It has been argued that the discrepancy between positivist and interpretivist worldviews is insurmountable in the combination of quantitative and qualitative methods, termed by Olsen (2003) the "epistemological chasm". However, this view depends on the assumption that methodology and methods are inseparable, which is rejected by the critical realist notion of the "epistemic fallacy" (Hughes and Sharrock, 2007; Olsen and Morgan, 2005). DCR acknowledges that no single method is adequate to establish truths about the social world, but employing multiple methods strengthens understanding (McEvoy and Richards, 2006), in particular the use of both quantitative and qualitative methods (Porpora, 2015).

Seeking causation is a priority in DCR research, which does not align with traditional interpretive paradigms that have guided the development of qualitative methodology (Guba and Lincoln, 1979). A DCR view of causality also deviates from a traditionally positivist view of cause and effect. However, the overarching principles of both quantitative and qualitative methods align with DCR; whilst quantitative methods often seek to determine patterns with the aim of establishing causality, qualitative methods are attuned to the openness and complexities of social reality (Roberts, 2014). The integration of methods arguably strengthens the persuasiveness of evidence obtained through research (Shih, 1998). DCR refers to open systems, where multiple forces compete to produce observable outcomes, which arguably renders the extrapolation of causality from simple correlations implausible (Fleetwood, 2017). Both Porpora (2015) and Bhaskar (1975) criticised the hyperfocus on analytical statistics to establish causality in socially rooted research. Explanations of social phenomena derived from research are not deemed exhaustive, so qualitative methodology can be employed to capture the nuances of fluctuating open systems (Downward and Mearman, 2006). MMR draws together the advantages of both methodological approaches and is, therefore, an appropriate means to conduct DCR informed research, as both methods can be used to identify generative mechanisms and understand intricacies of social phenomena, such as diagnostic practice.

### 4.4.2 Application of Mixed Methods to the Research

There are multiple ways to execute MMR (Creswell, 2003), and congruent with DCR principles, the selection of an appropriate design is guided by the pragmatic demands of the research aim. Quantitative methods produce broad data which is useful when there is no prior evidence on a topic (such as the terminology used by SLTs), and qualitative methods can produce detailed understandings of social phenomena (Morse, 1991). There are approximately forty MMR designs reported in the literature (Tashakkori and Teddlie, 2003), of which Creswell et al. (2003) describe three concurrent and three sequential designs that are commonly used in social research. A *sequential explanatory* design, as defined by Creswell (2003), is characterised by an initial quantitative approach followed by a qualitative investigation of the topic to explain any trends. This was appropriate for the current study because quantitative approaches provide a general understanding of an under-researched area, to which the views of participants can add depth and contextualise findings (Creswell et al., 2003; Tashakkori and Teddlie, 2003). DCR emphasises the value of explanation beyond description as an integral outcome of purposeful research and therefore an explanatory design is congruent. Figure 4-3 shows the implementation of mixed methods in the current study, based on Creswell (2003 p. 213):

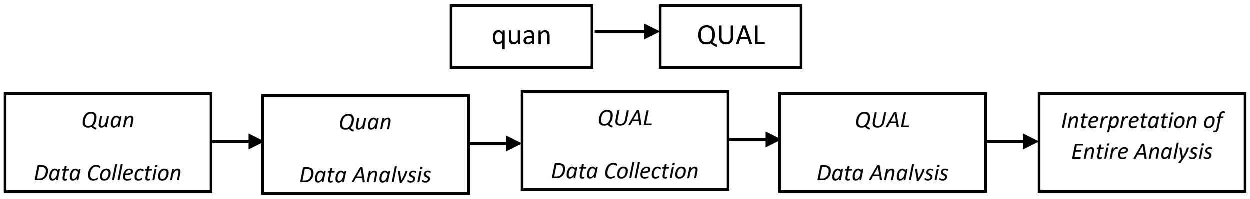


*Figure 4-3 Sequential explanatory design applied to this study*

Creswell (2003) recommends that researchers acknowledge which method takes precedence. Given the strong social basis of this study, the qualitative phase is the dominant element of the research (demonstrated in capitalisation), with the potential to contribute to answering all three research questions and explain the findings produced by the quantitative investigation.

Creswell and Plano Clark (2017) assert that it is the mixing of methods that distinguishes MMR as an approach separate from the use of multiple methods. Mixing is encouraged at the level of design and interpretation. Table 4-1 demonstrates the stages at which mixing occurred during the current research:

| **Research Stage** | **Evidence of MMR** |
|---|---|
| Research Design | Use of both quantitative and qualitative methods to address the research questions. This is complementary to the aim and theoretical approach. |
| Methods | Replication of aims in the quantitative and qualitative methods; using a survey and interviews which both investigate generative mechanisms. |
| Design of Phase 2 Methods | Early scoping of quantitative results informed the design of qualitative content. |
| Interpretation | Quantitative and qualitative methods are compared and contrasted together to address the research questions. |

*Table 4-1 Evidence of MMR application in the current study*

## 4.5 Quantitative Study Design

This section will detail how, through Online Surveys (previously Bristol Online Surveys), a survey was developed to generate broad data to show the terminology usage of SLTs in UK clinical practice. DCR principles prioritise seeking generative mechanisms, which in this research are potential reasons why SLTs use certain terms. This is achievable by obtaining data about clinicians and their practice, with specific areas to investigate informed by the literature and coproduction. The second aim of the survey is to identify whether any associations exist between clinician-related factors and their use of terminology.

The decision process for the selection of methods was guided by the theoretical underpinnings and overall research design. Previous quantitative research investigating the practice of SLTs has employed surveys (e.g. Selin et al., 2019), case vignettes (e.g. Fulcher-Rood et al., 2019), and caseload reviews (e.g. Cowie et al., 2001). In relation to other methods, surveys are less time and resource-intensive, so this method has the potential to yield large amounts of data at relatively low inconvenience to participants (Van Selm and Jankowski, 2006). This is beneficial for the current study, which aims to obtain sufficient data to permit the application of inferential statistics to investigate the strength of correlations between variables. Online surveys can be executed remotely, reducing geographical constraints to recruitment, and respondents can answer at their own pace, chosen time, and location preference (Hogg, 2003). The content of the survey was developed via coproduction with SLTs and informed by related literature. The full survey can be found in Appendix 1.

### 4.5.1 Survey Content: Literature Review and Coproduction

Survey content was devised by employing methodological principles to maximise validity, as outlined by Fielding et al. (2008). Content and face validity were primary factors in the design, but as the survey was not intended to be used as a measurement tool, it was not within the scope of the research to test for internal validity. To increase content validity, the items included in the survey were informed by the literature review; an approach to improving survey design articulated by Ruel et al. (2016). The literature highlighted some key issues that impact the diagnostic approach of SLTs and therefore might influence terminology use. These factors were: access to the evidence base (Fulcher-Rood et al., 2019), workplace characteristics (Selin et al., 2019), the contexts in which SLTs practice (Bishop, 2014; Walsh, 2005), and specialist clinical interests (Kamhi, 1995; Selin et al., 2019). At the time of survey design, the majority of articles available were commentaries, or based in US clinical practice, where services operate with considerable differences compared to UK systems.  Therefore, to support the design, the views of current SLT practitioners were sought using coproduction research strategies outlined by NIHR INVOLVE (2018). Expert consultation is also recognised as a means to improve validity (Vrbnjak et al., 2017).

According to NIHR, gaining insight into research needs, particularly from multiple stakeholder groups, is an important element of designing relevant and beneficial studies. Coproduction is a way of working with participant groups to attain their views on aims and design (NIHR, 2014; NIHR INVOLVE, 2018).  In a systematic review of patient participation, Brett et al. (2014) identified that coproduction can ground research in experiential reality, increase its relevance and enhance quality.  Clinical excellence networks (CENs) – previously named “special interest groups” - are professional hives of clinicians with an interest in a focused area of practice.  Email invitations to participate in coproduction were sent to two CENs with a paediatric focus.  Both groups agreed to discuss the research design as a feature of one of their meetings.  In April and May 2016, a 90 minute session was conducted with each CEN in in two different locations.  Approximately 35 SLTs attended each session, and were asked to discuss in small groups of 4-6, their use of diagnostic terminology.  Groups were encouraged to create mind maps, and were provided with the following broad discussion prompts:

- What diagnostic terms do you use in practice for speech, language and fluency?
- What do you think influences your use of terminology?
- Do you always give a diagnosis?
- What are the main challenges with regard to diagnostic terminology?
- Are there times when you vary or adapt the terms that you use?

Following this, groups were asked to review lists of speech, language and fluency terms that the literature review had suggested were prevalent.  The SLTs were encouraged to comment on whether they had encountered the terms in clinical practice, and to add any that were missing.

Barnes et al. (2003) warn against using predefined groups as a platform for coproduction, as individual members may be restricted in maintaining autonomy, with reluctance to break away from perceived group philosophies. The nature of CENs is to challenge norms, and some small group work was included in the coproduction sessions.  Participants were also encouraged to email any individual feedback on the topic.  Emails were received from 5 CEN members which contained offers to participate and help with recruitment, contribute follow up ideas and iterate the need for research into the area.

#### 4.5.1.1 Terms for Inclusion

One of the aims of coproduction was to identify terms for inclusion in the survey and factors that were important to their choice of terms to use.  These ideas were synthesized with findings from the literature review.  In particular, terms submitted by authors for the special issue of *Advances in Speech Language Pathology* (Holm and Crosbie, 2006) were considered for speech, terms reviewed by the CATALISE project (Bishop et al., 2016)  for language, and the STAMMA website was consulted for fluency terms.  RCSLT material was also reviewed (e.g. RCSLT, 2005; 2017a; RCSLT, 2017c), and terms from the DSM 5 and ICD-10 were considered for inclusion.  In addition to the work with the CEN, academic colleagues specializing in speech, language and fluency were contacted and invited to review the terminology proposed for inclusion in the survey.  Amendments made as a result of discussions with clinicians and academics included the addition of the term “child speech sound disorders”, although it had not featured considerably in UK literature.  Table 4-2 shows the final list of terms that were included in the survey:

| SPEECH | LANGUAGE | FLUENCY |
|---|---|---|
| Articulation disorder | Developmental language delay | Cluttering |
| Childhood apraxia of speech | Developmental language disorder | Dysfluency |
| Children’s speech sound disorder | Expressive language disorder | Fluency disorder |
| Consistent/Inconsistent phonological disorder | Language delay | Normal non-fluency |
| Developmental verbal dyspraxia | Language difficulty receptive/ expressive | Stammering |
| Dysarthria | Language disability | Stuttering |
| Phonological delay | Language disorder | |
| Phonological disorder | Language impairment | |
| Phonological impairment | Language learning disability | |
| Speech delay | Language learning impairment | |
| Speech difficulties | Language learning needs | |
| Speech problems | Language learning problems | |
| Speech disorder | Language problems | |
| Speech impairment | Primary language disorder | |
| Speech sound disorder | Primary language impairment | |
| | Receptive language disorder | |
| | Specific language impairment | |

*Table 4-2 Terminology included in the survey, determined by research literature, coproduction and consultation*

### 4.5.1.2 Identification of Clinician-Related Factors

Coproduction sessions also aimed to identify potential influential factors that might affect terminology use, in addition to those revealed by the literature review. Much discussion focused on the needs of clients, and some expressed concerns regarding the impact of the term "disorder" in the context of "developmental language disorder" on children's self-esteem. There was discussion about a lack of clarity regarding the position of the professional body on the issue of terminology since the publication of the CATALISE project (Bishop et al., 2016; 2017). Many were reluctant to implement the outcomes without clinical guidance, but were concerned that they were thereby not practising in alignment with the evidence base. Places of work were largely influential to terminology use, depending on the norms of specific services. Table 4-3 summarises these themes, and includes examples of written feedback:

| **CEN Consultation Themes** | |
|---|---|
| Research | "I don't feel I've kept up to date"<br>"It's hard to ring-fence time to read it all"<br>"I sometimes wonder do they [researchers] know what's happening at ground level" |
| Place of work | "Teachers aren't able to keep up with the changes"<br>"I mean really it's about criteria and funding"<br>"Our line manager is keen for us to use Bishop [CATALISE] terms" |
| Needs of children and families | "It depends on the child and what the parents are ready to hear"<br>"Can't bring myself to say disorder" |
| Time since qualifying | "I mean these [students] are learning it all now and coming to us with all this information…we need to be singing from the same hymn sheet" |
| Preregistration clinical training | "Well what are they teaching across the country – what do they teach here?"<br>"We need College to bring out a statement"<br>"I wonder how the lecturers keep up with teaching the changes" |

*Table 4-3 Example comments from coproduction sessions*

As a result of the coproduction work and a synthesis of themes within the literature, the following key areas were identified for inclusion in the survey:

- UK region
- Employment sector
- Clinical specialism
- Setting of practice
- University attended
- Decade of registration with the profession
- Access to research
- CEN attendance

Participants in coproduction also offered insights into the practical aspects of participating in research, suggesting that the survey be kept as short as possible, with minimal free text responses, and that reminders were sent out about completion of the survey.

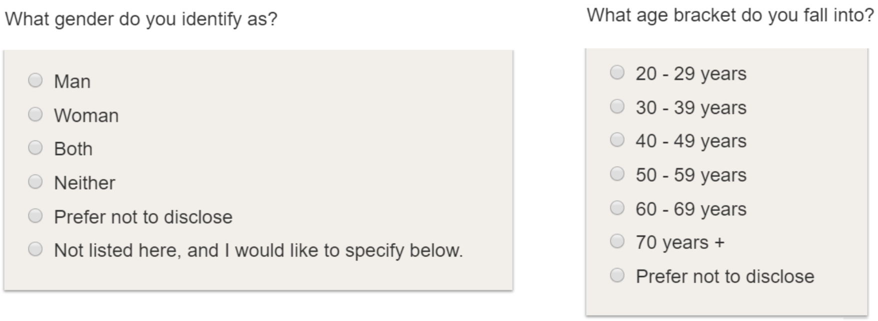
### 4.5.2 Survey Elements

A survey was constructed using Online Surveys (2020) to measure the frequency of use of diagnostic terms, and identify any relationships between clinician-related factors and use of diagnostic terms that reach statistical significance. A literature review of surveys in terminology and diagnostic processes in speech and language therapy and other allied health professions (conducted August 2017), revealed no published surveys available to be adapted for use in this study. In order to design questions and develop a new survey, a search for studies evaluating use of diagnostic terminology in any clinical area was conducted to inform the structuring of questions. Many studies employed scales of agreement; for example Glickman et al. (2009) studied the appropriateness of terminology in endodontics, by providing clinicians with statements and corresponding agreement scales. Taking a similar approach, Likert scales

(Likert, 1932) were employed in the current survey in order to attain the level of frequency that terms were used.

### 4.5.2.1 Assessing Representativeness

For the purpose of determining whether the sample was representative, pre-existing open data held about the population of paediatric SLTs in the UK were sought. HCPC and RCSLT were contacted with a request for data that is held about SLTs. RCSLT keep some demographic data but were unable to release it for use in research projects. HCPC has publically available data on age and gender of allied health professionals working in the UK, including SLTs (HCPC, 2017). Therefore as shown in Figure 4-4, the first questions in the survey asked participants to provide information about their age and gender in order to compare with HCPC data.



What gender do you identify as?

○ Man
○ Woman
○ Both
○ Neither
○ Prefer not to disclose
○ Not listed here, and I would like to specify below.

What age bracket do you fall into?

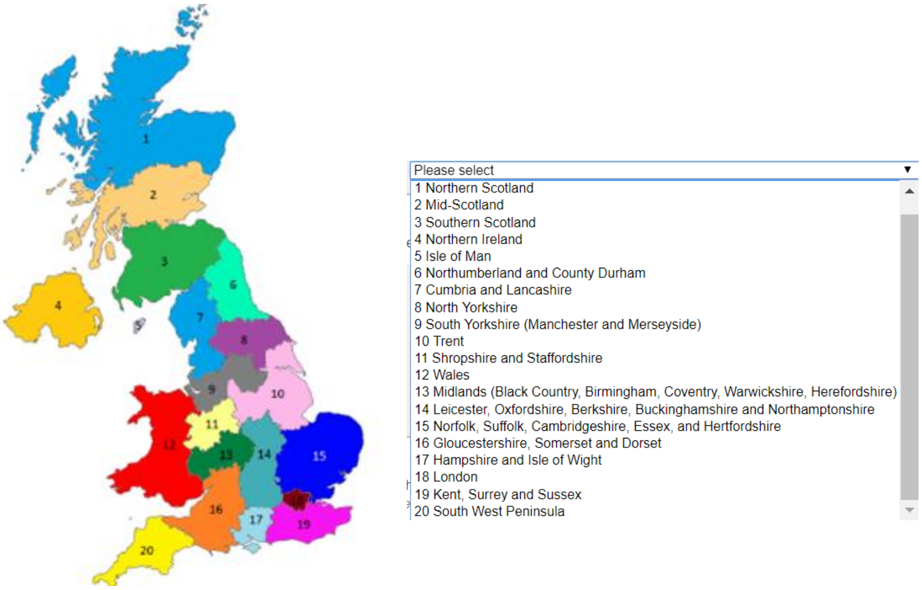
○ 20 - 29 years
○ 30 - 39 years
○ 40 - 49 years
○ 50 - 59 years
○ 60 - 69 years
○ 70 years +
○ Prefer not to disclose

*Figure 4-4 Survey questions pertaining to participants' age and gender*

#### 4.5.2.2 Clinician-Related Factors

*UK Region*

Schindler (2005) and Murza and Ehren (2020) speculated that terminology might be used inconsistently by SLTs across geographical regions in the UK and the US, and it was raised in coproduction that terminology may vary across the UK.  A survey question was developed to determine whether the UK region that SLTs' practised in was associated with terminology use.  As there is no single agreed means to regionalise the UK, strategic health authorities within which SLTs practice (HCPC, 2017), were merged into 20 groups. As shown in Figure 4-5, participants were asked to select which depicted area most closely represented their region of practice:

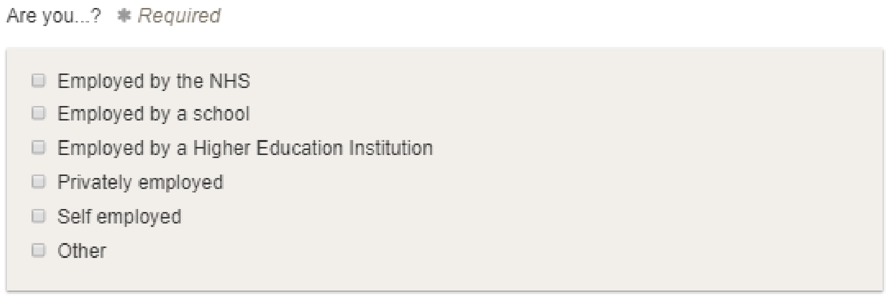


Please select
1 Northern Scotland
2 Mid-Scotland
3 Southern Scotland
4 Northern Ireland
5 Isle of Man
6 Northumberland and County Durham
7 Cumbria and Lancashire
8 North Yorkshire
9 South Yorkshire (Manchester and Merseyside)
10 Trent
11 Shropshire and Staffordshire
12 Wales
13 Midlands (Black Country, Birmingham, Coventry, Warwickshire, Herefordshire)
14 Leicester, Oxfordshire, Berkshire, Buckinghamshire and Northamptonshire
15 Norfolk, Suffolk, Cambridgeshire, Essex, and Hertfordshire
16 Gloucestershire, Somerset and Dorset
17 Hampshire and Isle of Wight
18 London
19 Kent, Surrey and Sussex
20 South West Peninsula

*Figure 4-5 Survey question: UK Region*

*Employment Sector*

In coproduction, potential differences between SLTs working in independent practice or as part of the public sector were briefly discussed. Within the public sector there are different areas of employment including local authorities (education), and the NHS. There is limited research that focuses on employment sector and practice, but differences have been found in satisfaction pertaining to workload (Flatley et al., 2014). In order to investigate any association with terminology use, participants were asked to indicate their employment sector as shown in Figure 4-6:



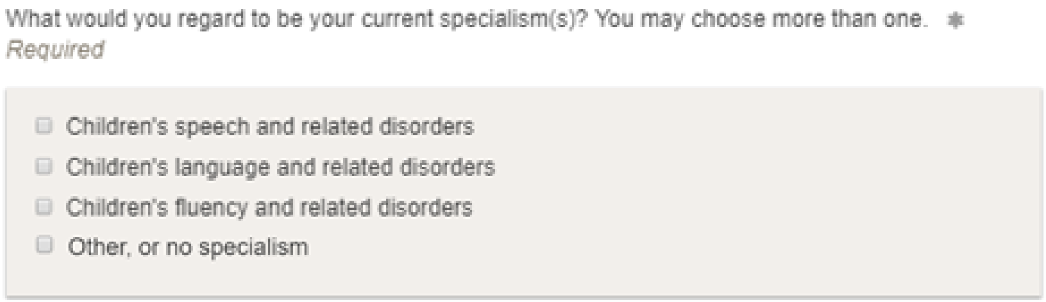
Are you...? * Required

☐ Employed by the NHS
☐ Employed by a school
☐ Employed by a Higher Education Institution
☐ Privately employed
☐ Self employed
☐ Other

*Figure 4-6 Survey question: Employment sector*

*Clinical Specialism*

There is some literature to indicate that clinical specialisms are wide-ranging across the UK, which is a source of variation between SLTs. There are, for example, very few SLTs who specialise in fluency, and it has been suggested that, in the absence of additional training, most SLTs are not confident to work with these clients (Crichton-Smith et al., 2003; St Louis and Durrenberger, 1993). The question presented in Figure 4-7 was included to investigate whether this was associated with terminology use. SLTs were asked to self-report, rather than use job titles denoting specialism e.g. "specialist" or "highly specialist" as these are applied inconsistently across UK services (Pring et al., 2012).



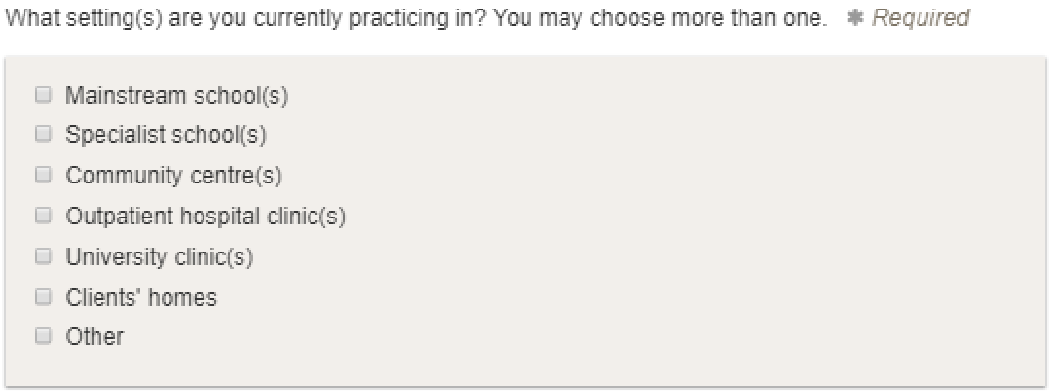
What would you regard to be your current specialism(s)? You may choose more than one. *
Required

- ☐ Children's speech and related disorders
- ☐ Children's language and related disorders
- ☐ Children's fluency and related disorders
- ☐ Other, or no specialism

*Figure 4-7 Survey question: Clinical specialism*

*Setting of Practice*

SLTs practice in a range of settings including hospitals, education settings from preschool to post-16, community clinics, children's centres and clients' homes (Pring et al., 2012), and the literature reviewed in Chapter 3 suggested that workplace characteristics may impact diagnostic practice (e.g. Fulcher-Rood et al., 2018; Selin et al., 2019). The employment sector of an SLT does not necessarily align with the setting of practice (for example, the NHS commissions SLTs to work in schools) and so these are investigated as separate variables. Coproduction sessions revealed that SLTs felt that the differences between being in a medical and educational environment when practising may alter their diagnostic terminology. SLTs also suggested that there may be differences between mainstream and specialist educational settings. An example of this was that children in specialist settings might have more complex needs, and it was thought that these parents and the teaching staff are often more familiar with receiving medicalised diagnoses in other areas of development. Therefore it was considered that when practising in specialist settings, SLTs might be more likely to use technical diagnostic terminology. The combination of these points resulted in the question shown in Figure 4-8:


What setting(s) are you currently practicing in? You may choose more than one. ✱ Required

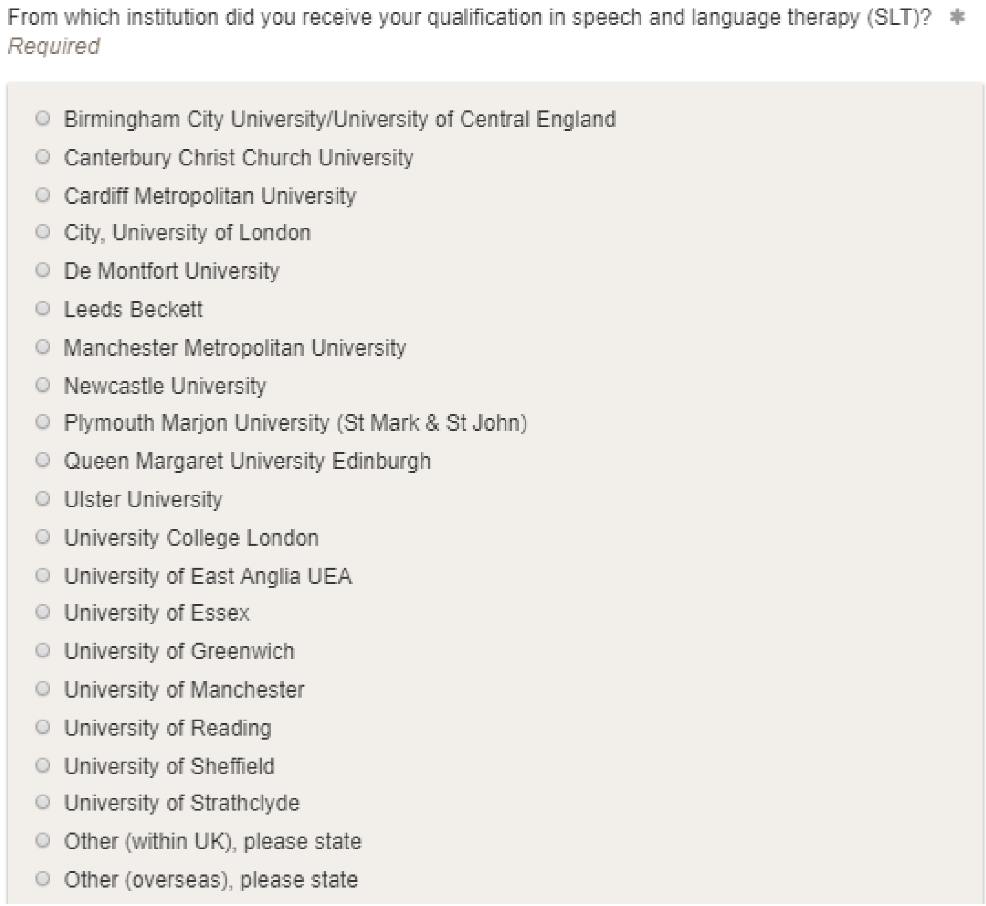
☐ Mainstream school(s)
☐ Specialist school(s)
☐ Community centre(s)
☐ Outpatient hospital clinic(s)
☐ University clinic(s)
☐ Clients' homes
☐ Other

*Figure 4-8 Survey question: Setting of practice*

*__University Attended__*

During coproduction, SLTs queried whether preregistration training may influence use of diagnostic terminology. In the UK, preregistration SLT courses must meet HCPC standards of education (HCPC, 2014) and adhere to RCSLT curriculum guidelines (RCSLT, 2018d), however the SLTs speculated that there was sufficient variation in training to impact future practice. In a recent survey investigating the research content of preregistration courses, Pagnamenta and Joffe (2018) found notable variation was reported by lecturing staff from across 14 programmes. Although few studies have investigated differences in speech and language therapy training across universities, there is evidence to indicate retrospective low satisfaction amongst SLTs. However, to date this research has mostly been conducted with US-based clinicians. Studies have shown that overall, following initial training, SLTs in the US report not feeling prepared for practice in the areas of fluency (Kelly et al., 1997), autism (Plumb and Plexico,

2013) and brain injury (Hux et al., 2009). To investigate potential differences, a question was included for participants indicate which university they had attended from a list of UK based higher education institutions (Figure 4-9):



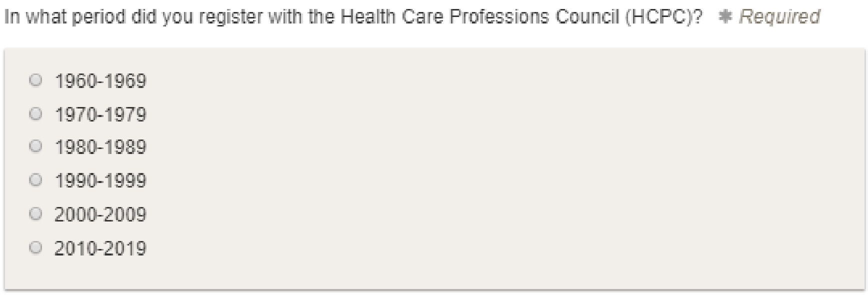
From which institution did you receive your qualification in speech and language therapy (SLT)? *
*Required*

- ○ Birmingham City University/University of Central England
- ○ Canterbury Christ Church University
- ○ Cardiff Metropolitan University
- ○ City, University of London
- ○ De Montfort University
- ○ Leeds Beckett
- ○ Manchester Metropolitan University
- ○ Newcastle University
- ○ Plymouth Marjon University (St Mark & St John)
- ○ Queen Margaret University Edinburgh
- ○ Ulster University
- ○ University College London
- ○ University of East Anglia UEA
- ○ University of Essex
- ○ University of Greenwich
- ○ University of Manchester
- ○ University of Reading
- ○ University of Sheffield
- ○ University of Strathclyde
- ○ Other (within UK), please state
- ○ Other (overseas), please state

*Figure 4-9: Survey question: University attended*

*Period of Initial Registration with the Professional Body*

The amount of time elapsed since qualification was a further issue raised during coproduction, particularly with regard to differences in the amount of experience using terminology and making diagnoses. Some considered that more recent graduates had more up-to-date information about evidence based practice. There is limited evidence to indicate how the time since initial training of SLTs might impact later practice. Cascella and Colella (2004) compared knowledge of autism in a survey of 82 US-based SLTs by decade of graduation (1970s, 1980s, and 1990s). Minimal differences were detected between groups, however statistical comparisons were not made. For the current study, a survey question was devised to ascertain which decade participants had registered with the licensing body to practice under the protected titles “speech therapist” or “speech and language therapist” (Figure 4-10). This was either RCSLT (before October 2000), the Council for Professions Supplementary to Medicine (2000-2002), or HCPC (from 2002 onwards) (Leahy and Supple, 2002).



In what period did you register with the Health Care Professions Council (HCPC)? * *Required*

○ 1960-1969
○ 1970-1979
○ 1980-1989
○ 1990-1999
○ 2000-2009
○ 2010-2019

*Figure 4-10 Survey question: Initial registration with professional body*

*Access to Research*

In coproduction, several SLTs raised problems with accessing research, with the main challenges being paywalls, insufficient time to search for and read articles, and difficulties deciphering how to implement the evidence. There is a known lag between research and clinical practice, with an average 17 year discrepancy between publication of evidence and practice implementation in healthcare (Morris et al., 2011). In a survey of ASHA members Mullen (2005) identified that the majority of US-based SLTs experienced difficulty accessing and interpreting research. A question was included which grouped participants in relation to their perceived level of access and availability of time to engage with research (Figure 4-11):

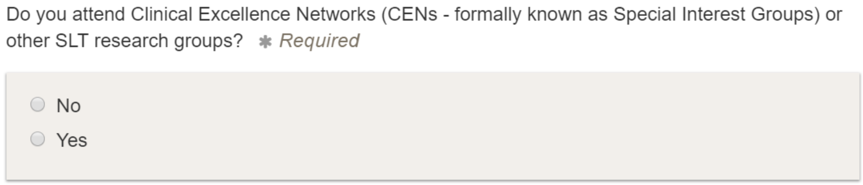
How would you rate your access to research in your field? ✱ *Required*

○ I am able to access sufficient research for my professional needs
○ It is difficult to access research
○ It is difficult to find time to access research
○ I do not access research in my practice
○ Other

*Figure 4-11 Survey question: Access to research*

*CEN Attendance*

Across health professions, there is some evidence to indicate that access to continual professional development (CPD) can affect clinical practice (Greenhalgh et al., 2004; Kamhi, 1995). In coproduction, SLTs felt that the CEN provided an opportunity to share ideas about practice with other clinicians, and were considered a source of CPD. Given that there is little research into the impact of CENs, this was also included as a question in the survey (Figure 4-12):



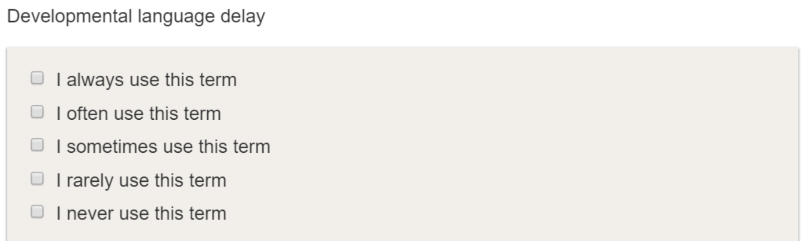
Do you attend Clinical Excellence Networks (CENs - formally known as Special Interest Groups) or other SLT research groups? ✱ *Required*

○ No
○ Yes

*Figure 4-12 Survey question: CEN attendance*

#### 4.5.2.3 Diagnostic Terms

The terms for inclusion in the survey were presented under the categories of speech, language and fluency. Likert scales (Likert, 1932) were used to ascertain how frequently participants used each term. There is limited consensus regarding design of Likert questions. Simms et al. (2019) found that whilst presenting 1-3 response options may be overly simplistic, respondents struggle to differentiate items when more than 6 are offered. There is some evidence that an odd number of response items increases satisficing, especially if presented horizontally (Krosnick, 1991). However, an even number of responses removes the option of a mid-range response entirely, which may artificially skew the data (Busch, 1993). Whilst some research is critical of the indifference attributed to mid-scale items (e.g. Nowlis et al., 2002), other research has found minimal differences in presenting an odd or even number of items (Simms et al., 2019). The risk of satisficing has been shown to be significantly reduced if there is no time pressure, the task is not difficult, the survey is short in length and participants have good cognitive skills (Krosnick et al., 2002). As the nature of the research aligned with these factors, a 5 point scale was used for rating frequency. Terms were presented as individual items, and participants were asked to rate their use of each term as either *always*, *often*, *sometimes*, *rarely* or *never*, as exemplified in Figure 4-13:

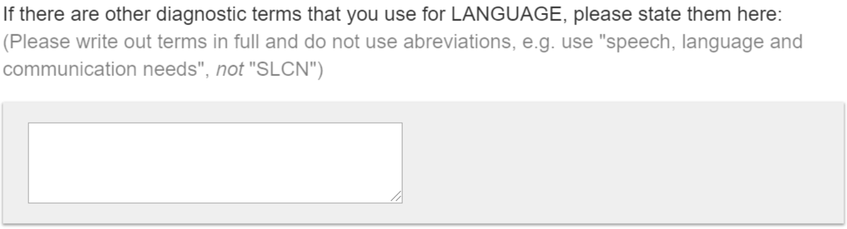


Developmental language delay

☐ I always use this term
☐ I often use this term
☐ I sometimes use this term
☐ I rarely use this term
☐ I never use this term

*Figure 4-13: Example of Likert scale survey question presented for rating terminology frequency*

In addition, a free text response was included for participants to submit any additional terms used in practice that had not been included in the survey, as shown in Figure 4-14:



If there are other diagnostic terms that you use for LANGUAGE, please state them here:
(Please write out terms in full and do not use abreviations, e.g. use "speech, language and communication needs", *not* "SLCN")

*Figure 4-14 Survey question: Other terms used in practice*

### 4.5.3 Ethical Considerations

At the core of operating ethically, research must be of overall beneficence to society, whilst avoiding malfeasance (Vanclay et al., 2013; Wasserman, 2013). Researchers are responsible for ensuring the safety of participants in four main areas: obtaining informed consent, seeking to exclude the risk of harm, ensuring participant anonymity and confidentiality, and maintaining the right to withdraw from participation at any stage of the process (APA, 2002). Although most of the content of the survey was not deemed sensitive, participants were provided a “prefer not to answer” option for the representativeness check regarding age and gender. Ethical approval was received from Birmingham City University’s ethics committee in the Faculty of Health, Education and Life Sciences (Appendix 2). The data collected by the survey was minimized to what was deemed most useful, as determined by the design phases, in order to reduce the possibility of identification via combined responses. Some potential questions were omitted during the design process, for example regarding the working hour patterns and salary bands of participants, in order to reduce their time commitments. All factors investigated had a clear rationale for inclusion and purpose in analysis.

The consent procedure for this study required participants to confirm that they were willing to participate, understood the nature of their participation, and were aware of their rights as participants

(Appendix 3). The first page of the online survey was a participant information sheet that included the purpose of the study and the possible risks and benefits of taking part (Appendix 4). The anticipated time required was included to help inform their decision. It was stated that there were no direct benefits to taking part, but responses would provide valuable information about the terminology use of SLTs in the UK. They were informed that they could withdraw at any point. In order that their anonymous responses could be located to enable withdrawal of data after submission, participants were asked to enter a word of their own choosing as a free text item. As part of giving consent, participants ticked a box to confirm that they had read and understood the study information. Participants were provided with contact details of the research team and the university, and informed that they could use these for feedback, queries and complaints.

### 4.5.4 Pilot Phase

A piloting stage is often recommended as part of novel survey design (e.g. Portney and Watkins, 2020) in order to test the practicality of the survey and face validity (Fielding et al., 2008). Final year students (n=63) enrolled on the Speech and Language Therapy undergraduate course at Birmingham City University were invited to pilot the survey in April 2018. It was iterated that participation was optional and anonymous. Using guidelines provided by Bell (2014 p. 150-151), the purpose of the pilot was to attain feedback on the content and procedural elements of the survey. Participants in the pilot were asked to comment on:

- Length and layout of the survey
- Clarity of instructions and questions
- Objections to answering any of the questions
- Any topics that had been omitted.

A total of 16 students piloted the survey, and 3 provided short comments on these areas. Table 4-4 shows how the responses were used to modify the survey:

| **Survey Question** | **Student Response** | **Amendments made** |
|---|---|---|
| 3: What gender do you identify as?<br>4: What is your ethnicity? | ? why gender and ethnicity are relevant | Added statement to explain why this information was taken (to check the representativeness of data). |
| 14; 16; 18: What diagnostic terminology would you use, if any, to describe a child with a primary form of SLCN in the realm of LANGUAGE/ SPEECH/ FLUENCY? | It was unclear whether you were asking about the vocab we'd use to make a diagnosis, in official documentation, or the vocab we'd use when discussing problems with the child and parents - I vary my language according to audience and context | Added the phrase "in any context" as it was important to know the terminology used across contexts. |
| 15; 17; 19: Please state the diagnostic terminology that you most often use, if any, to describe a child with a primary form of SLCN in the realm of LANGUAGE/SPEECH/FLUENCY? | Might be better to talk about prefered *[sic]* vocabulary rather than frequency of vocab use | The term "preferred" was not considered accurate for the research aim as this implies that SLTs use their preferred term, which may not be the case. |

*Table 4-4: Responses from survey piloting phase and consequential action*

### 4.5.5 Eligibility, Sample Size and Recruitment

Purposive sampling was used to recruit participants who were paediatric SLTs. Inclusion criteria for the survey were SLTs currently registered with HCPC practising in the UK with a paediatric caseload that included children who have primary needs in the areas of speech, language and/or fluency. Exclusion criteria were therefore any person not registered as an SLT with HCPC, any SLT working exclusively with adults, or not working with children who have primary needs in speech, language and/or fluency. There is no way of truly determining whether a person completing the survey met the criteria as entry to the survey was not password protected. However, as no tangible benefit was offered to participants (such as a financial incentive), the likelihood of people completing the survey who were not eligible SLTs was considered to be low.

Recent surveys conducted with paediatric SLTs in the UK have generated wide-ranging response rates, with sample sizes such as: 516 (Pring et al., 2012), 62 (Davies, 2014a), and 265 (Watson and Pennington, 2015). Ideally, power analyses are used to determine sample sizes (Portney and Watkins, 2020), to ensure that statistical significance can be reached at an acceptable level. Predetermining the sample size holds limited value in early exploratory studies, as scarce data are available on which to base calculations (Jones et al., 2003). In addition, the aim of the current study is not to test strictly defined and deductively derived hypotheses, so power calculations were not deemed necessary. More data points increase statistical power and confidence in analysis, and thereby the probability of detecting an effect, should it exist. As identified by Parkinson et al. (2015), recruiting healthcare professionals to surveys can produce low numbers. Therefore it was important to have a robust recruitment strategy to attain a reasonable sample size. Gascoigne (2006) reported that 70% of the SLTs working in the UK were paediatric therapists; at the time there were approximately 10,000 SLTs in the UK. In 2017 there were 16,081 SLTs registered with HCPC (HCPC, 2017). RCSLT (2017a) stated that 60% of the workforce were paediatric therapists which, of the 16,081 registered with HCPC, would indicate that there were approximately 9648 paediatric SLTs in the UK at the time of survey recruitment.

In accordance with DCR recommendations for research design, participants were recruited from multiple settings, which supports comparisons across contexts (Wong et al., 2012). As recommended by Parkinson et al. (2015), support from professional networks was sought (CENs and RCSLT Hubs), and direct hyperlinks to the survey were included in all online postings. Notifications of the survey were posted on social media (particularly Twitter) and on one occasion a notification of the study was placed in the RCSLT research email which is sent monthly to all RCSLT members. In alignment with recommendations of studies seeking to maximize survey response rates with health professionals (e.g. Gore-Felton et al., 2002; Puleo et al., 2002), the survey remained open for a period of 3 months and reminders were posted intermittently on social media two weeks apart.

### 4.5.6 Analysis Strategy and Initial Data Processing

Over the period June-August 2018, the survey accrued 374 responses which, upon closure, were exported from Online Surveys to Microsoft Excel. Descriptive statistics were applied to the Likert response data to identify which terms were most frequently used across the sample. Inferential statistics were required to identify the strength of relationships between the dependent and independent variables, so data were transferred to the software package Statistical Product and Service Solutions (SPSS) (previously known as Statistical Package for the Social Sciences) (IBM Corp., 2017). The method of inferential analysis was determined by the characteristics of the data and the research aim. As the data were nonparametric and variables were nominal, applicable tests included the chi-square test or logistic regression (Agresti, 2007). A chi-square test for independence (Pearson, 1900) describes the magnitude of relationships between variables, and it is possible to identify where in the data the strongest associations occur, which aligns with the research aim. Whilst a logistic regression has the advantage of modelling determinants and predict the likelihood of an outcome, it is noted that, in this research, only a modest set of independent variables were measured. Consequently, any modelling achieved through logistic regression may misrepresent genuine relationships and potentially suggest false conclusions. Chi-square tests were therefore used to initially explore the data.

The chi-square test is used to investigate the relationship between nominal variables using frequency tables. The values observed in the data across the two variables "observed frequencies" ($O_i$) are summed across rows and columns to give "row totals" and "column totals". A truly even distribution of data indicates that the independent variable does not impact the dependant variable. These are the values that would be "expected" ($E_i$) if the null hypothesis ($H_0$) were true. The $E_i$ is calculated for each cell by multiplying the column total by its corresponding row total, and dividing by the total number of observations. Table 4-5 displays the essential components of a frequency table:

|  | ***Independent Variable Group 1*** | ***Independent Variable Group 2*** | ***Independent Variable Group 3*** |  |
|---|---|---|---|---|
| ***Dependent Variable Group 1*** | $O_i$<br>$E_i$, | $O_i$<br>$E_i$, | $O_i$<br>$E_i$, | *Row total* |
| ***Dependent Variable Group 2*** | $O_i$<br>$E_i$, | $O_i$<br>$E_i$, | $O_i$<br>$E_i$, | *Row total* |
| ***Dependent Variable Group 3*** | $O_i$<br>$E_i$, | $O_i$<br>$E_i$, | $O_i$<br>$E_i$, | *Row total* |
|  | *Column total* | *Column total* | *Column total* |  |

*Table 4-5 Example of a frequency table with individual components essential to a chi-square test*

The dimensions are reported as $R \times C$, where $R$ is the number of groups for the row variable, and $C$ is the number of groups for the column variable. The degrees of freedom (df) incorporate the number of groups into the calculation of chi-square:

$$\text{df} = (\text{number of rows } -1\ ) \times (\text{number of columns } -1)$$

The chi-square test for independence measures the difference between the observed and expected frequencies (Sharpe, 2015). The null hypothesis ($H_0$) assumes that there is no detectable difference between values of $O_i$ and $E_i$ (Agresti, 2007). The formula for calculating chi-square is:

$$\chi^2\,(\text{df}) = \sum \frac{(O_i - E_i)^2}{E_i}$$

$\chi$= chi
df = degrees of freedom
$O_i$ =observed values in the data
$E_i$= expected values, assuming no association

Variables that are split into more groups require large values of $\chi^2$ in order to reach statistical significance (Agresti, 2007). The significance level (α) represents the likelihood of rejecting $H_0$ when it is true; in this study, the significance level is set to be $\alpha = 0.05$, with acceptance of a 5% chance of committing a type I error, which is typical for social research (Banerjee et al., 2009). Chi-square testing operates on four assumptions about the data (McHugh, 2013):

**First assumption:** Variables are nominal.

**Second assumption:** There is independence of observations; no relationship can exist between groups of variables, or between observations in each group. This assumption is met as each participant's data features in only one group per variable.

**Third assumption:** A naturalistic sampling method (i.e. cross-sectional) was used to collect the data.

**Fourth assumption:** The sample size and distribution of the data must be sufficient so that there are a minimum of 80% of cells with an expected count greater than or equal to five.

For some independent variables, participants were able to select multiple response items. To meet the second assumption, where a single participant input more than one response, these data were combined to form a new "multiple" group for each variable (shown in Table 4-6). The modelling of the chi-square test in SPSS produces expected values based on what is input. In order to meet the fourth assumption, with at least 80% of expected values greater than 5, it was unfeasible to analyse data through maintaining the groups as survey response items as expected counts were consistently low. Therefore, groups of response items were combined pragmatically, as shown in parentheses in Table 4-6:

| Demographic | Combined Groups |
|---|---|
| Region of practice within the UK | a. **North England** (Yorkshire, Cumbria, Northumberland, Isle of Man)<br>b. **Midlands** (Leicester, Oxfordshire, Berkshire, Buckinghamshire and Northamptonshire, Black Country, Birmingham, Coventry, Warwickshire, Herefordshire, Shropshire, Staffordshire, Trent)<br>c. **South England** (London, Kent, Surrey, Sussex, Hampshire, Isle of Wight, Gloucestershire, Somerset, Dorset, Norfolk, Suffolk, Cambridgeshire, Essex, Hertfordshire, South West Peninsula)<br>d. **Scotland** (southern, mid, and northern)<br>e. **Northern Ireland**<br>f. **Wales** |
| Employment sector | a. **Multiple** (overlapping responses)<br>b. **NHS**<br>c. **Local Authority**<br>d. **Higher Educational Institutions**<br>e. **Privately employed** (privately employed and self-employed)<br>f. **Other** |
| Clinical specialism | a. **Multiple** (overlapping responses)<br>b. **Other, or no specialism**<br>c. **Fluency**<br>d. **Language**<br>e. **Speech** |
| Setting of practice | a. **Multiple** (overlapping responses)<br>b. **Other**<br>c. **Outpatient settings** (client's homes, university clinics, outpatient clinics, community centres)<br>d. **Specialist schools**<br>e. **Mainstream schools** |
| University attended | a. **Other** (UK and overseas)<br>b. **Post-1992 Higher Education Institutions** (Cardiff Metropolitan University, Canterbury Christ Church University, Birmingham City University, Manchester Metropolitan University, Leeds Beckett University, De Montfort University, Queen Margaret University Edinburgh, Plymouth Marjon University (St Mark & St John), University of Greenwich)<br>c. **Pre-1992 Higher Education Institutions** (University of Strathclyde, University of Sheffield, University of Reading, University of Manchester, University of Essex, University of East Anglia, University College London, Ulster University, Newcastle University, City, University of London) |
| Decade of HCPC registration | a. **2010-2019**<br>b. **2000-2009**<br>c. **1990-1999**<br>d. **1960-1989** (1960-1969, 1970-1979 and 1980-1989) |
| Perceived access to research | a. **No problems accessing research**<br>b. **Difficulty accessing research (time)**<br>c. **Difficulty accessing research (other reasons)** |
| CEN Attendance | a. **Yes**<br>b. **No** |

*Table 4-6: Grouping of survey variables for analysis*

Universities were combined according to establishment pre or post 1992, a means of division employed by many other studies comparing Higher Education Institution (HEI) provision in the UK (e.g. Cartwright, 2007; Toyoshima, 2007; Yorke, 1998) although it is acknowledged that this is tenuous. As there is no unified means for the division of the UK into regions at the level useful for this analysis, findings from a survey of 7963 adults on UK identity conducted by YouGov (2017) guided the groupings of regions used in the survey. The regions used were divided first by country: Scotland, Northern Ireland, Wales and England; and subsequently England was divided, arbitrarily, to regions of "Northern England", "Midlands" and "Southern England", as depicted in the left hand image in Figure 4-15:

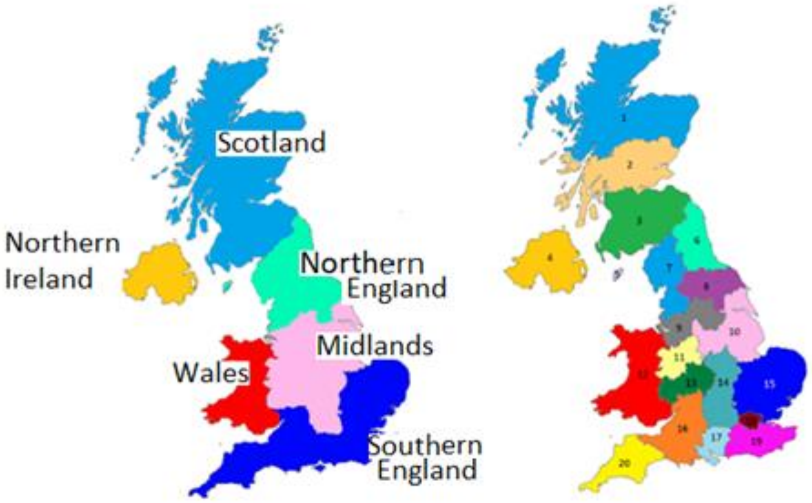


Figure 4-15 Groupings of UK regions for analysis, compared to those used in the survey

The fourth assumption was violated for every chi-square test conducted with data spread across five Likert response options. Some terms generated very low or zero data points in extreme response categories *always* or *never.* For those with extreme skew, it is unlikely that the data in the minority groups would have increased substantially to fulfil the fourth assumption of the chi-square test without a major increase to the sample size. It was therefore necessary to increase expected frequencies of cells in order to fulfil this requirement by combining groups within variables. Collapsing multiple categories into two groups, termed “dichotomisation” involves loss of information and may lead to reduction in efficiency in the statistical analysis under consideration (Cohen, 1983). Many epidemiological studies have used this technique when the categorical data being dichotomised is the dependent variable (e.g. Arber, 1997; Mackenbach et al., 1997; Manor et al., 2000; Shetterly et al., 1996), as it is in the current study. A common example is collapsing data from self-rating health scales, which typically have three to five response categories, into “good” versus “less than good” health. Likert response items were grouped for this part of the analysis, initially by grouping responses as “use of term” against “absence of use”, in a “yes/no” format, i.e.:

- Group 1: always, often, sometimes, rarely
- Group 2: never

However, a large number of test outputs continued to violate the fourth assumption as the data were skewed towards Group 1, producing low entropy. Entropy is the average level of information inherent in the possible outcomes of a variable (Shannon, 1948). Combining responses *never* and *rarely* increased the entropy of data across variables:

- Group 1: always, often, sometimes
- Group 2: never, rarely

This grouping also makes ecological sense, as it will reveal the associations between clinician-related factors and terms that are used at least *sometimes* (or less than) in practice. It is arguable that terms used *rarely* are closer by definition, to the response *never* compared to *always.*

It is acknowledged that the application of chi-square testing to data obtained from Likert scales is contentious, as it is widely accepted that Likert scales produce ordinal data (Jamieson, 2004; Wu and Leung, 2017). The use of chi-square testing with ordinal data is debated because the analysis does not maintain the ordered nature of the data (Rahlfs and Zimmermann, 1993). However by condensing five groups into two, the variable is converted from ordinal to nominal (specifically dichotomous), thus bypassing the problem.

Combining groups did not prevent all tests from failing the fourth assumption, and in such instances, it is advisable to disregard the result and instead use a Fisher's exact test (Field, 2009; Pallent, 2013; Reid and Boore, 1991). A Fisher's exact test (Fisher, 1922) does not use an approximation like the chi-square test and therefore remains valid for small sample sizes.

However, a Fisher’s Exact test is often not recommended for comparisons larger than 2 × 2 (Lydersen et al., 2009), and therefore was not used for the entire analysis. Unlike the chi-square test, Fisher’s does not produce a test statistic, and it is typical to only report the *p*-value. However, as a Fisher’s exact test makes pairwise comparisons between variables, it is advisable to correct the *p*-value for the number of possible pairs in each test when applying the test to multiple comparisons ($R \times C$). This can be achieved by applying the Bonferroni-corrected pairwise technique, which controls the overall type I error rate when multiple significance tests are carried out. For each Fisher’s test, the criterion of significance of the $\alpha$-level is divided by the number of tests conducted minus 1 (Field, 2009). Therefore, in order to declare statistical significance, a smaller *p*-value is required, compared to the chi-square tests.

For uniformity however, the results of the Fisher’s exact tests were used to inform the logistic regression analysis. The Fisher’s exact test is also widely recognised to produce overly conservative *p*-values (D'Agostino et al., 1988), and it is often recommended that these are treated as an upper limit (Little, 1989; Yates, 1984). Therefore, both statistically significant and results, and those approaching significance ($p$ <0.10), were used to inform the selection of variables to assess in the logistic regression. The aim was to assess the relationship between the clinician-related factors in predicting to predict the frequency of use for each term. A logistic regression can determine whether the regression between these two variables is statistically significant; how much of the variation in the dependent variable is explained by the independent variable; understand the direction and magnitude of any relationship; and predict values of the dependent variables based on different values of the independent variable (Field, 2018; Peng et al., 2002). The results of this analysis are reported in Chapter 5.

## 4.6 Qualitative Study Design

As part of the sequential explanatory design applied to this mixed methods study, the survey was followed up with qualitative investigation. The purpose of the qualitative phase was to provide rich data that can explain the results generated by the survey. The use of qualitative methods can facilitate conceptual explorations of how systems operate and support identification of the generative mechanisms that underpin events (Bhaskar, 1975). The selection of methods appropriate to the research problem is key to enhancing the theoretical rigor of qualitative research (Rice and Ezzy, 1999). Common qualitative methods include participant observation, focus groups and interviews (Petty et al., 2012).

Through participant observation, it is possible to describe and interpret phenomena (Creswell, 1998), however this does not align with the current research focus on producing explanations. In a recent study seeking to understand the experiences of SLTs in diagnosing DLD, Thomas et al. (2019) used focus groups, however these hold a risk of '"groupthink" whereby the members of the group seek to minimise conflicts by suppressing alternative viewpoints (Boateng, 2012). They are also typically limited to 3-5 questions (Krueger and Casey, 2002), whereas interviews enable the researcher to explore salient topics to each participant in depth, generating insight into perceived causal inferences. Research has demonstrated that focus groups do not necessarily produce significantly more or better ideas than individual interviews (e.g. Fern, 1982). Interviews offer a means to obtain detailed information to support the understanding of complex social phenomena (Smith and Elger, 2014). According to Crabtree and DiCicco-Bloom (2006), the purpose of research interviews is to enhance conceptual and theoretical knowledge based on the experiences of interviewees, which aligns with the aim of this research. The level of detail achievable through interviewing complements the opposing strengths of the survey method. The following sections will outline the theoretical and practical elements of interview design and procedures.

### 4.6.1 Interview Design and Topic Guide Development

The intention of interviews in this study was to investigate the reasons for participants' terminology use and their approaches to diagnosis. Berg (2001 p. 67) likened interviews to "a conversation with a purpose", as they provide a means to obtain rich information about a phenomenon of interest. According to DCR, interviews are a way to explore the empirical reality of individual agents and learn their perceptions, attitudes and emotions towards the social structures they operate within (Smith and Elger, 2014). Across CR and DCR literature, it is emphasised that the researcher takes an active position in generating data from interviews and plays an equal part with interviewees in constructing a representation of their reality (Hammersley and Atkinson, 2007; Smith and Elger, 2014). In adherence with this view, interviews were designed with a semi-structured format, with a loose topic guide of areas to explore with interviewees, as described by Crabtree and DiCicco-Bloom (2006). It was important to provide the opportunity for each participant to focus on issues which were pertinent in their practice, as the nature of SLTs' roles can be highly varied (Pring et al., 2012).

To enhance the rigour of qualitative design, Guba and Lincoln (1989) proposed that researchers employ techniques to ensure its dependability, credibility, and transferability. This includes triangulation, and in accordance with MMR, elements of the quantitative phase were used to inform the design of interviews. Maintaining a close link between broad data attained from quantitative findings and the design of interviews is also recognised to enhance the rigour of qualitative research (Tobin and Begley, 2004). Interview questions incorporated the same clinician-related factors that were investigated via the survey. Survey participants were able to submit terms that they used in practice which were not included in the survey via a free text response box. Many of these responses appeared to be colloquial or descriptive, and therefore a question was included regarding the use of descriptive terms as diagnoses. Issues raised during coproduction and salient themes in the literature review that were not investigated by the survey were also incorporated in the interview schedule, producing the following areas to be pursued qualitatively:

- Impact of terminology on families
- Different needs for terminology across different contexts
- Public awareness of terminology
- The response to the publication of the CATALISE project
- Stigmatisation of diagnoses

The summation of survey results, themes from the literature, and issues raised in coproduction contributed to the development of the interview schedule shown in Figure 4-16:

1. Could you describe to me the sort of clients that you work with?
   *Possible prompts: What sort of speech/language/fluency needs do your clients tend to have? What diagnostic terms would you use to describe those needs?*

2. What are your reasons for choosing certain terms [insert example of term]?
   *Possible prompts: So you told me you use [insert term], why do you use that in particular? Does that reflect your place of work?*

3. In your own view, what do you think the pros and cons are with using diagnoses?
   *Possible prompts: How does diagnosis benefit your practice/are there any disadvantages?*

4. Do you always use diagnosis in practice?
   *Possible prompts: Why/why not? When do you use diagnosis more/less?*

5. Would you ever change the diagnostic terms that you use – for example depending on who you were talking to?
   *Possible prompts: Do you use the same diagnostic terms with everybody? Does that change depending on where you are working?*

6. Do you ever experience resistance to certain terminology or diagnosis itself?
   *Possible prompts: Do parents/services/schools ever give the impression that a diagnosis is not useful?*

7. How do you make diagnoses in your practice?
   *Possible prompts: What stages/process do you go through when making a diagnosis? Would you ever/always use assessment tools? How does the evidence base feature in your diagnostic process?*

8. In your experience, is diagnosis in speech and language therapy consistent across the profession?
   *Possible prompts: How do you think other SLTs approach diagnosis?*

9. How do you think parents feel about diagnostic terminology?
   *Possible prompts: Are parents happy to receive a diagnosis for their child? Do you ever encounter parents not wanting a diagnosis?*

10. What impact has the CATALISE project had, if any, on your practice?
    *Possible prompts: Has it changed the terminology that you use? Has your service changed in response?*

*Figure 4-16 Interview schedule with key questions and prompts*

Participants were initially asked to provide context about their clinical work, in part this also served to settle them into the interview process. All questions were initially designed to be broad to account for the variability of experiences in clinical practice, and to enable the course of interviews to follow the lead of participants. The order of questions was rearranged depending on the progression of the interview to enable smoother transitions between questions. For example, the question about parents would be introduced earlier if the contents of an answer referred to working with parents. Sometimes the wording was amended, usually to mirror that of the participants. Prompting questions were included to encourage participants to expand upon responses. Probing questions were also prepared which asked participants to further explain a response and provide a deeper account when necessary, for example, "Can you tell me more about that?"

Practical approaches to interviewing include: face-to-face, telephone, and Voiceover Internet Protocol (VoIP) (Opdenakker, 2006). Face-to-face has advantages such as reading visual cues (e.g. facial expression and body language), whilst telephone interviews can be conducted over a vaster geographical range. VoIP mechanisms such as Skype allow both visual support and large geographical reach, but may present difficulties building rapport if technological problems interrupt conversational flow (Lo Iacono et al., 2016). Across literature, variation exists as to whether face-to-face (Sweet, 2002), VoIP (Janghorban et al., 2014) or telephone (Opdenakker, 2006) serve as the optimal interview method. As each offer advantages, participants in this study were offered a choice of interview type.

### 4.6.2 Eligibility Criteria and Recruitment

The eligibility criteria remained the same for this phase of research as for survey recruitment. Inclusion criteria were SLTs, registered with HCPC, practising in the UK with a paediatric caseload including children who have primary needs in the areas of speech, language and/or fluency. Exclusion criteria were therefore any person not registered as an SLT with HCPC, any SLT working exclusively with adults, or not working with children who have primary needs in speech, language and/or fluency. Although qualitative research does not seek to achieve generalisability in the same manner as qualitative research (Denscombe, 2014), recruiting participants from multiple sites can increase the value of findings for other contexts (Shenton, 2004). The sample was drawn from the larger group of SLTs who had participated in the survey. Survey participants could submit an email address if willing to be contacted about participating in an interview, to which 65 responded. Each response was assigned a number and a random number generator was used to select 10 at a time to be contacted, in order to maximise the rigour of the sampling process (Mays and Pope, 1995).

SLTs were invited to participate in interviews in their preferred format: VoIP, telephone, or face-to-face if they were in close proximity to an accessible location. Those who responded to the email confirming interest were sent an information sheet and consent form. Participants who selected VoIP interviews were given the option of Skype, WhatsApp video call or FaceTime. Once 5 interviews had been conducted, a further cohort were emailed until it was unlikely that conducting further interviews would produce new themes, guided by regular surface analyses of transcripts. It has been argued that premeditation of sample size is not congruent with the principles of qualitative research (e.g. Bowen, 2008; Braun and Clarke, 2016). Data saturation, where no new themes or concepts occur in interviews, is generally considered a guide for the point at which recruitment could end in a qualitative study (e.g.Francis et al., 2010; Guest et al., 2006). Some qualitative researchers suggest a “10+3” guide for sample size; a minimum of 10 interviews are conducted, and a further three are used to check whether any new themes arise compared to the previous 10, and the cycle is repeated after each three interviews until no new themes are identified (Francis et al., 2010). In accordance with the 10+3 rule, an initial surface analysis of themes arising in transcripts was conducted after 10 interviews. Following this, 3 additional interviews were conducted, and a second analysis was conducted to test for new themes. As new themes were identified, three further interviews were conducted. New themes were also identified at this stage, so the process was repeated until no new themes were detected. This was deemed to be achieved at the fourth cycle, at which point recruitment was terminated, resulting in a total of 22 interviews for full analysis.

### 4.6.3 Ethical Considerations

For this stage, the ethical principles outlined for the quantitative phase were also followed: informed consent, minimised risk, maintenance of anonymity and confidentiality and rights to withdraw (APA, 2002; Vanclay et al., 2013; Wasserman, 2013). Approval for this stage of the research was granted by Birmingham City University (Appendix 5). Survey participants who expressed interest in participating were emailed consent forms (Appendix 6) and an information sheet (Appendix 7) to inform their decision about taking part, which included contact details of the researcher, supervisors and the university's data protection officer. Consent forms were obtained for all participants prior to interviews, and hard copies were signed and stored securely at the university. To ensure the personal data of participants remained confidential, General Data Protection Regulation (GDPR) procedures were followed (European Council, 2016). The interview topic was not deemed to be of a sensitive nature, but participants were reminded that all questions were optional and could be skipped, and that they were able to withdraw from the study at any time. Interviews were recorded on an encrypted device and transcribed at the earliest opportunity. Raw audio data were removed from all devices after transcription and accuracy checking was completed (approximately 1 month from the time of interview) as voice audio is considered identifiable data under GDPR. All identifying features in the data such as names of participants and locations were anonymised using pseudonyms (as listed in Table 4-7) when analysing and reporting findings.

### 4.6.4 Pilot Phase

A piloting phase was conducted with four SLTs, in order to gain experience interviewing technique, test the application of the interview guide, identify challenges and reflect on the process with participants.

Piloting phases are often considered unnecessary in qualitative research designs, as it is widely accepted that a gradual refinement of interviews is an inherent part of the overall process (Holloway, 1997 p. 121). However, Frankland and Bloor (1999 p. 154) argued that piloting offers a "clear definition of the focus of the study" which can inform the focus of the data collection process. Many qualitative guides suggest that pilots are a useful part of the process if the interviewer is inexperienced (Holloway, 1997; Malmqvist et al., 2019). Generally it is agreed that interview pilot data is suitable for inclusion in the final analysis if revisions made to the content (e.g. topic guides) are not extensive (Malmqvist et al., 2019). All four pilot participants selected face-to-face as their preferred interview type, so this was the only mode to be piloted.

According to DCR principles, the interviewer aims to co-construct a representation of social reality with participants, and must actively engage in the process (Smith and Elger, 2014). Interviewers collaboratively build on the responses of interviewees to maximise the narrative (Holstein and Gubrium, 2011). Active participation was challenging, especially whilst being mindful of preconceived ideas derived from extensive literature engagement on the topic. This required ongoing reflection and reflexive journaling following each pilot interview and the addition of more neutral prompting questions. Interviewers are also encouraged to check that their interpretations of responses match the participant’s intended meaning (Smith and Elger, 2014), so check-ins were included in pilot interviews to ensure that a shared understanding was maintained. As suggested by Gubrium and Holstein (1997), participants were offered regular check-ins to build on interviewer feedback, which many used to confirm or provide an extension of their answer. At the end of pilot interviews, interpretation of ideas was discussed with the participant and they were asked to provide feedback about whether their ideas had accurately been understood. Overall, feedback from pilot participants indicated that they felt supported in articulating ideas, rather than led, and that they were able to challenge ideas. All four participants offered corrections and clarification regarding the representation of their answer at least one check in point.

Following the piloting phase, some minor changes were made to interview questions. For example, one participant considered a question about whether criteria was used when making diagnoses to be testing the quality of their practice, so this was amended to be a more general enquiry about diagnostic processes. Pilot participants were also asked to comment on the interviewing style and there was a preference across all four for a relaxed and conversational discussion. Overall, modifications to the interview guide were minimal with regard to content, so pilot transcripts were included in the final analysis.

### 4.6.5 Interview Procedure

Interviews took place with 22 participants: 11 face-to-face, 2 via VoIP mechanisms and 9 conducted over the telephone at the request of participants (Figure 4-17). Participants who opted for remote interviews unanimously did so for convenience reasons such as geographical location or flexibility in schedule. Participants who selected face-to-face were offered the choice to have the interview on the university campus, at the participant's place of work, or in a publically accessible location. All interviews were conducted in quiet rooms and were audio recorded for transcription.

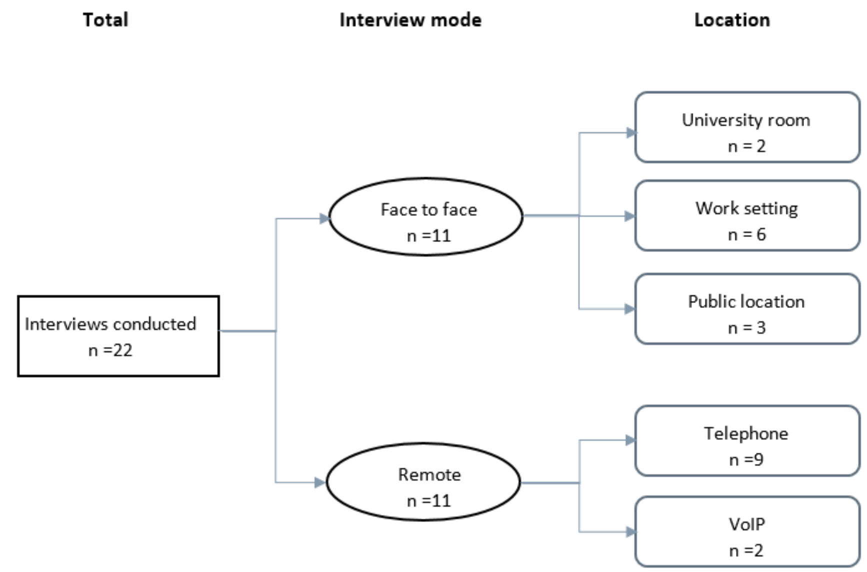


*Figure 4-17 Types of interview conducted with participants*

Interviews lasted 35-65 minutes, with face-to-face interviews generally taking more time than VoIP or telephone interviews.  Previous research suggests this may be due to both the interviewee and interviewer talking less on the telephone (Irvine, 2011), in part due to decreased distraction compared to face-to-face interactions (Vogl, 2013).  There was some variation in rapport across interviews, and previous research suggests that the mode of interview may have an impact (Novick, 2008).  Some telephone interviews seemed to have less of a natural flow compared with face-to-face interviews which was possibly due to missing visual contextual information, such as body language cues.  For example, it was difficult to identify whether a participant was pausing for thought or had completed their response, and as a result there were more overlapping voices in telephone interviews; an issue also identified by Conrad et al. (2008).  Despite methodological debate regarding the use of VoIP versus telephone methods, in this study there were minimal apparent differences noted between the two methods.  Benefits in visual information provided by VoIP seemed to be counteracted by a slight delay in signal transmission which occurred less in telephone interviews.  Table 4-7 provides some clinician-related factors related to the 22 interviewees.  Each participant was assigned a pseudonym in order to preserve anonymity.

| Pseudonym | Setting(s) of Practice | Clinical Specialism(s) | Employment Bod(ies) | UK Region |
|---|---|---|---|---|
| Charlotte | Clients' homes | Speech and language | Independent | West Midlands |
| Nicole | Specialist school | Autism and language | Local Authority | London |
| Jackie | Mainstream schools | Speech and language | NHS | West Midlands |
| Sheryllin | Community clinics | Language | NHS | West Midlands |
| Rebecca | Mainstream schools | Generalist | Local Authority | West Midlands |
| Elle | Mainstream schools | Generalist | Local Authority | West Midlands |
| Kitty | Mainstream schools | Language | NHS | West Midlands |
| Stephanie | Mainstream schools | Language | NHS | London |
| Caitlin | Language unit | Generalist | Local Authority | London |
| Dylan | Language unit | Generalist | Local Authority | South Yorkshire |
| Heidi | University clinic<br>Clients' homes | Speech and autism | NHS<br>Independent | South Yorkshire |
| Patricia | Mainstream schools | Language | NHS | West Midlands |
| Izzy | Community clinics | Generalist | NHS | Greater Manchester |
| Danielle | Mainstream schools | Language | NHS | West Midlands |
| James | Community clinics | Autism | NHS | London |
| Sandy | Clients homes | Generalist | Independent | East Midlands |
| Grace | Specialist school | Autism | Local Authority | Wales |
| Melissa | Specialist school | Generalist | Local Authority | London |
| Sophie | Clinic | Speech | NHS | West Midlands |
| Laura | Clinic<br>Mainstream schools | Language | Local Authority | West Midlands |
| Harriet | Clinic | Generalist | University | West Midlands |
| Jessica | Clinic | Generalist | University | West Midlands |

*Table 4-7 Details of interview participants*

During interviews, concepts familiar to the interviewee were incorporated, for example the term used for the people they worked with (e.g. "clients", "students" or "children") was mirrored. Although most questions from the topic guide were asked in all interviews, the main focus of each interview varied between participants. Field notes of salient contextual features such as facial expression, tone of voice and emphasis were taken to support future interpretation (May, 1991). The focus of interviews tended to reflect the professional role of participants, such as the nature of caseloads and working in different settings.

In order to attain a rich understanding of a topic through interviews, Britten (1995) advocated that researchers strive for detail and regularly check for understanding in order to minimise the influence of presumptions. In accordance, responses were periodically summarised and repeated back, but to a lesser extent than the checking process conducted during the piloting phase. Participants were encouraged to reflect on potential reasons underlying their experiences and views in order to attain insight to consciously held generative mechanisms, an element of CR interviewing advocated by Smith and Elger (2014). At the close of interviews, participants were asked to reflect on their interview and provide any final thoughts, or raise areas not covered. Generally, participants did not provide feedback on the interview, and were satisfied with answers. One participant chose to talk more about the issue of raising awareness of language disorders, three asked questions about the evidence base for language interventions, and four asked for clarification on interpretation of criteria for developmental language disorder. Several inquired about when the findings were likely to be published, and iterated their perceived need for research into this area.

### 4.6.6 Transcription Process and Key

Five interviews were transcribed by the researcher and the other 17 were sent to a third party transcription service. All transcripts were thoroughly read and interviews were played back to check for accuracy. The semi-structured interview method places the main focus on the informational content of responses rather than conversational features such as pauses, interruptions and involuntary vocalisations (MacLean et al., 2004; Sandelowski, 1994). Therefore, as suggested by Oliver et al. (2005), the syntax as spoken by participants, such as word order, was retained in the transcripts but non-words were not included. Once transcription and accuracy checking were complete, audio files were destroyed and word documents were uploaded to the qualitative data analysis software programme *NVivo 10* (2012), to support the analytic process. Maintaining close links with the raw data throughout the process enhances interpretive rigor (Rice and Ezzy, 1999). When reporting quotes from transcripts in the results (Chapter 6), "*(sic)*" is used where the words spoken by a participant are not grammatical or there is a semantic or pragmatic error. Ellipses in square brackets "[…]" denote instances where the words that detract from the content were removed from quotes, for example if the participant used extensive filler words and phrases such as "like", "sort of" and "you know".

### 4.6.7 Quality and Trustworthiness

To maximise the quality and rigour of design and interpretation, qualitative research must adhere to principles of credibility, transferability, and dependability (Guba and Lincoln, 1989). Guba and Lincoln (1989) outline recommended strategies throughout the research process, in order to enhance the trustworthiness of findings; many of which were employed in the current study. To ensure the credibility of the research process and terminal member checks were employed. Immediately following interviews, the researchers' early interpretations of the data were explored with participants, by asking interviewees whether or not they agreed with an overall summary.

The level of bias, often termed "rigour" in qualitative studies, should be examined to demonstrate the trustworthiness of the findings. Guba (1981) suggests criteria for assessing the rigour of qualitative studies with reference to constructs for quantitative constructs, and due to the closeness of this relationship, these criteria been applied to the mixed methods study presented in thesis. Guba (1981) refers to credibility, transferability, dependability and confirmability. This means of appraising study quality has been used extensively across qualitative research.

#### 4.6.7.1 Credibility

Credibility refers to the confidence in the accuracy of the research, and is assessed by the quality of the methods employed (Guba, 1981). Several measures were taken to enhance the credibility of the study:

| Recommendation of Guba (1981) | Measures taken in the current study |
|---|---|
| The use of well-established methods | As recommended, well established research methods were used, and the decisions taken have been carefully justified and documented at each stage. Alternatives have been appraised and the rationale is provided for the final choice of methods. A detailed application of methods is also presented for each phase of the study. |
| Pilot testing | As recommended by Forero et al. (2018), the interview protocol was tested on four occasions. This is intended to calibrate the researcher's knowledge of the research protocol. |
| Reliability and bias in participants' responses | Social desirability bias occurs when participants moderate their narrative in a way that aligns with what they anticipate to be correct or acceptable (Van de Mortel, 2008). In this study, the influence has been moderated by asking indirect questions about their process rather than direct questions about their clinical practice. For example, instead of asking whether SLTs used standardised assessments, they were asked about how their process of assessing clients. |
| Thick description of the data | The integration of many direct quotations from participants ensures that the interpretations taken were led by the data. The use of thick description of the data in Chapter 6 bolsters the transparency of this process, thus increasing its validity (Morse, 2015). |
| Advisory input | The views of practising SLTs was sought at various stages, in order to ensure that the research questions, methods, and interpretation were relevant and inclusive, and reflected the professional need. Co-producing the research ensured that multiple perspectives were incorporated, thus reducing the influence of the researcher's own biases.<br>The work also benefited from close supervision, from those with both quantitative and quantitative expertise, as well as clinical experience. The study design, analysis and interpretation of findings were discussed and scrutinised, then amended or justified accordingly. |
| Member checking | Member checking is regarded as an important means of assuring trustworthiness (Lincoln and Guba, 1985). Checking respondents' views was not undertaken formally in this study, but themes were discussed and verified with professional groups during CEN meetings and conferences (RCSLT Annual Conference in September 2019 and NAPLIC Annual Conference in March 2020). The supervisory team and SLTs working closely with the researcher on other projects were also consulted for input. |

*Table 4-8 Measures taken to maximise credibility of the qualitative study*

In addition, reflexive commentary was essential in enabling a critical awareness of pre-conceptions of the phenomena under study to be developed. This was achieved through journaling, and seeking guidance from colleagues and critical friends. Researchers are encouraged to engage in reflexivity by acknowledging biases and subjectivity (Cumming-Potvin, 2013; Nowell et al., 2017). Reflexivity involves drawing attention to the researcher to examine their influence on the design and interpretation (Finlay, 1998). Recommended strategies for reflexivity were followed throughout the research process to enhance trustworthiness (e.g. Nowell et al., 2017). Field notes were made during and after interviews to identify salient thoughts and reactions to participants' responses. An example of reflexivity that was examined in this research was the conflicting influence of prior knowledge. Researchers are generally characterised either as insiders, having spent time within the group participating in the research, or as outsiders with no previous experience (Edwards, 2002). It was useful to reflect upon my contribution to the interviewer role, both as an "outsider researcher" interviewing SLTs as a non-clinician, and to some extent as an "insider researcher" having received speech and language therapy services and a diagnosis of a disability from paediatric services. The outsider researcher can be perceived by organisations to be more impartial (Kim, 2012), while the insider researcher may be criticised for not being sufficiently distant (Sikes and Potts, 2008). A few participants disclosed that they felt able to openly discuss negative aspects of their professional lives, which is a commonly recognised advantage of being an outsider. Some asked questions about the evidence base in relation to their client group, referring to my "research expertise", and three participants enquired about individual children on their caseload, describing their features and requested my opinion on a diagnosis. This was managed by reminding participants that my knowledge of evidence pertains mostly to theories of terminological developments in the field, rather than clinical aspects. Prior to interviews I anticipated needing to seek clarification on participants' discussion of clinical concepts, but this did not occur.

It was typical for insiderness and outsiderness to interact. For example, some participants reported that families were more likely to have low understanding of diagnosis if they were from a lower socio-economic background. I documented that this challenged my own ideas as an insider, having known families living in highly deprived circumstances who have extremely good understanding of diagnostic concepts. I also acknowledged my "outsiderness", from not having the insight and experience of working with families as a clinician. During analysis, a log of interpretations and how these changed was continually updated and reflected upon, as part of keeping an overall audit trail, which is a key strategy for enhancing the trustworthiness of the process (Houghton et al., 2013; Morse, 2015). As recommended by Berger (2015), guidance from supervisors and critical friends who were SLTs was sought, which enabled a critical awareness of preconceived ideas through extensive challenging discussions.

#### *4.6.7.2 Transferability*

The findings of the qualitative study are derived from a small number of participants, which limits the extent it can be applied more widely to other contexts. However, there are various techniques to enhance the degree to which the results can be transferred to other contexts (Guba, 1981). Forero et al. (2018) emphasise taking a broad approach to sampling in order to maximise representativeness. Restricted or closely prescribed sampling can restrict the credibility of research. The sampling for this study was purposive, with specified criteria for recruitment, but the final recruitment of participants who fulfilled the criteria was not prescribed by the researcher during the data collection. Participants could be any SLT with experience working with children in the UK.

To minimise the risk of *elite bias* (Huberman and Miles, 1994), where a sample lacks variation and underrepresents certain categories of participants, the characteristics of participants were monitored throughout recruitment. Both phases of the research recruited widely, with SLTs participating from a range of settings across the UK (see Table 5.1). In addition, maintaining a close link between the qualitative findings and the design of the quantitative study increases the value of the findings for other contexts (Shenton, 2004).

#### *4.6.7.3 Dependability*

True replication of studies is rarely achievable in qualitative research, but dependability can be enhanced by meticulously recording the research processes. An audit trail was maintained through the use of a research log. The design and execution of research methods are thoroughly detailed in Chapters 4 and 6 to increase the transparency of methods. In addition, triangulating findings enhances their dependability (Forero et al., 2018). A sequential explanatory design was employed in order that the findings from both phases could be compared. This also allowed the design of the qualitative phase to have been informed by the survey findings. The results of each phase both inform the final contribution to knowledge of this research.

#### *4.6.7.4 Confirmability*

Bias is an inevitable feature of any research endeavour, and the essential nature of human preconceptions is acknowledged in in DCR. Alderson (2016a) stated that researchers cannot enter the social world "value-free", but there are strategies to both acknowledge and address these, in order that they do not dictate the research direction. An audit trail can demonstrate the steps involved in the planning and implementation of the project (Shenton, 2004). A research journal was also used to record a reflexive account of the process, and supervisors, critical friends and colleagues were consulted as part of the design and interpretation of the research. In addition the motivations for the research and insider perspectives are laid out in Chapter 8.

### 4.6.8 Analysis Strategy

The analytical approach deemed most appropriate for the current study was selected through appraisal of methods outlined in qualitative research. Initially, framework analysis as described by Ritchie et al. (2003) was considered, as it offers a clear means to organise findings in a systematic way, via a process of coding and mapping data. However, it is a relatively prescriptive method and categorisation of data may result in loss of individual narratives and nuances, which may be problematic in studies where participants have diverse experiences, (Gale et al., 2013). Interpretative phenomenological analysis (IPA) offers an approach that treats data on a case-by-case basis, and associations are made between individual transcripts (Smith, 1996). Whilst this is useful for examining individual engagement with the phenomena, IPA is most appropriate for data where the "lived experience" of participants is a dominant and defining element (Smith, 2004), which is not the focus of the current study.

Thematic analysis, as outlined by Braun and Clarke (2012) is a also method for systematically organising data and identifying patterns, with underlying principles that complement those of this research. Shared meanings within texts are extracted and identified as "themes", which enable researchers to comprehend core elements of data. This provides insight to the phenomena of interest from the perspective of participants. It offers a means to examine individual transcripts and their meanings, whilst also identifying similarities and differences across the dataset (King, 2004). As an inherently data driven approach, thematic analysis offers scope for generating unanticipated insights (Nowell et al., 2017). The researcher plays an active role in generating themes that best represent the data, which facilitates interpretation (Braun and Clarke, 2019). Braun and Clarke (2006) state that thematic analysis is capable of yielding "rich and detailed" insights, which complements the aim of the current study.

The flexibility of thematic analysis can be advantageous for understanding complex data (Braun and Clarke, 2006), however it has been argued that this may limit cohesion in the development of themes unless a strong theoretical position is employed to guide analysis (Holloway and Todres, 2003; Nowell et al., 2017). Thematic Network Analysis (TNA) is a nuanced approach to thematic analysis initially proposed by Attride-Stirling (2001) that provides a robust framework for identifying themes. It has the procedural element of framework analysis, with additional tolerance for idiosyncrasies in the data. Like thematic analysis, TNA unearths salient ideas in a dataset with an additional focus on the nature of relationships between themes (Attride-Stirling, 2001). By visually mapping themes, TNA can be used to demonstrate how issues occurring in the data overlap or interact, and is therefore a highlight appropriate method for use in the current study. TNA is also complementary with DCR principles, which acknowledge that a number of physical, social, cultural and psychological factors may be involved in producing social events, such as the diagnostic approach of SLTs. Stylianou and Scott (2018) employed the Four Planar Social Being framework (Bhaskar, 1975) to support the coding process of identifying themes in thematic analysis. Methodologically, this facilitated consistent data organisation at the level of data coding. The use of the framework also resulted in the connection of themes with macro, meso, and micro levels of society and the impact of the phenomena of interest on individuals. This approach is highly relevant to the current study given the close links with practice, and the societal impact of terminology use identified in the literature review.

One of the main features of TNA is the classification of themes into a taxonomy of ideas at three levels: *basic, organising* and *global. Basic themes* are derived directly from text via a process of coding, and are intended to provide simple characteristics of the data. In isolation, basic themes are descriptive and rely on the context of other basic themes in order for meaningful interpretations to be made (Attride-Stirling, 2001). This can be achieved by clustering basic themes that represent similar issues into *organising themes*, which summarise the core aspects of a group of basic themes. Groups of organising themes generate superordinate *global themes*. Global themes act as metaphors for the data, and can be used to present a broad claim or argument about the principle issues that have been identified through the analysis. The role of the organising themes is to link these claims back to the descriptive thematic level, as they hold more information than basic themes but are not as abstract as global themes. This mid-level link can therefore provide clear connections between broad claims and the supporting data (Attride-Stirling, 2001). One of the relative strengths of TNA is the procedural support to identifying themes. Attride-Stirling (2001) outlined a six-step process to conducting TNA which, as shown in Table 4-8, was followed in the current study:

| Stage of Analysis | Application to the Current Study |
|---|---|
| **Stage 1: Coding the material** | Familiarisation with raw data<br>Documentation of theoretical reflections using mind-mapping<br>Loose and evolving framework developed using NVivo software with an audit trail of amendments |
| **Stage 2: Identify themes** | Outlining potential themes from coded text segments<br>Documentation of theme naming and definitions<br>Detailed notes recorded about development of concepts and themes<br>Whole transcripts reviewed used to ensure themes represent data |
| **Stage 3: Construct thematic networks** | Arrange themes through the use of diagrams to find theme connections<br>Select Basic Themes<br>Rearrange into Organising Themes<br>Deduce Global Themes<br>Verify and refine networks |
| **Stage 4: Describe and explore thematic networks** | Describe the contents of each network<br>Explore and note underlying patterns within networks |
| **Stage 5: Summarize thematic networks** | Main themes characterising the network succinctly described<br>Illustration of the network devised |
| **Stage 6: Interpret patterns** | Interpretations and theory synthesised |

*Table 4-9 Process of Multi Stage Thematic Network Analysis (Attride-Stirling, 2001)*

### 4.6.9 Analysis Procedure

In accordance with Table 4-8, the initial stage of analysis was a period of familiarisation, by writing initial impressions whilst reading transcripts. These impressions were plotted using mind-maps and used to support the development of a system of codes in NVivo which was continuously refined and revised. Excerpts from interviews were manually extracted and assigned to codes in NVivo, based on shared meaning or concepts. Issues at all four levels of the Four Planar Social Being model proposed by Bhaskar (2008) were considered in the analysis, in particular participants' setting of practice (material relations), the influence of social structures such as stigma (broader social relations), interactions with families and professionals (interpersonal relations) and participants' personal views and experiences of diagnostic practice (inner being). Codes were grouped and structured in clusters, guided by rich description and a structured, yet dynamic, exploration of data with sections of interview transcripts. Discussion with the supervisory team contributed to the process by challenging ideas and exploring alternative perspectives.

Basic themes were then devised, refined and grouped on the basis of similar or contrasting issues to establish organising and global themes. Interview extracts that were used in the development of multiple themes were used to support this process. A common issue that arose during the early stages of analysis was establishing whether themes were better suited to be organising or global, as also described by Davies (2014a). This was overcome via increasing familiarisation with overall networks, and global claims about the data were subsequently developed. Where issues were discussed by the majority of, or all participants, these appeared to be critical matters. Often, these did not necessarily form themes per se, but it is reported within themes which were particularly important. In addition, some participants expressed the pertinence of certain issues in their practice, or conveyed this through their emphasis, as documented in field notes (reference the importance of field notes). This is also documented throughout the description of themes in Chapter 6.

Definitions and names of themes underwent significant revision, but strong links with the raw data were maintained, supported by the use of NVivo which retains extracts within whole transcripts. Many of the ideas overlapped throughout the analysis, which further supported the decision to use TNA, as this fostered the joining of similar themes from multiple perspectives. The visual construction of thematic networks provided the foundation for interpretation, and strong relationships between organising themes were identified. Links that occurred across the dataset were clearly laid out and are presented in the reporting of results throughout Chapter 6. This supported interpretation and integration with quantitative findings, as discussed in Chapter 7.

## 4.7 Summary

This chapter has outlined and justified the methodological decisions taken for the design and execution of the research, in alignment with the principles of DCR. An MMR approach was used as the combination of qualitative and quantitative measures can yield both broad and rich data to address the research questions. The aim of this study is to reveal the intransitive generative mechanisms that interact in open systems to produce the observable phenomena in the ways that SLTs make diagnoses in practice. Data collection commenced with the distribution of an online survey, which asked clinicians in the UK about their use of speech, language and fluency terminology in practice, and aims to identify any associations that exist between use of terms and clinician-related factors. This accrued 374 responses, and the results of the analysis, which includes descriptive statistics, chi-square testing and Fisher's exact tests, is presented in Chapter 5. Early appraisal of survey results informed the design of the qualitative phase of the research. A topic guide was devised for semi-structured interviews which were conducted with 22 paediatric SLTs. Thematic network analysis was applied to the data, and the findings are presented in Chapter 6. The results from both phases of the research are compared, contrasted and considered in the context of previous literature in an extensive discussion presented in Chapter 7.

# CHAPTER 5: THE TERMINOLOGY USE OF PAEDIATRIC SPEECH AND LANGUAGE THERAPISTS IN THE UK

This chapter presents the outcomes of the quantitative study which is the first phase of this mixed methods research. The survey accrued 374 responses from paediatric SLTs practising in the UK. The purpose of the survey was to address research questions 1 and 2 posed by this study, namely:

1. What terminology is used by paediatric SLTs in the UK to denote primary speech, language and fluency diagnoses?
2. What factors underpin the diagnostic terminology used by paediatric SLTs in the UK?

The chapter opens by comparing the data pertaining to the age and gender of participants with data for the wider population of paediatric SLTs in the UK, in order to show the representativeness of the sample. An overview of the spread of the data across the groups for each clinician-related factor is provided in Section 5.2. The rest of the chapter presents the results of the data analysis. In address of research question 1, a descriptive analysis of the data indicates the frequency spread of the terminology used by participants. This provides an early indication of the factors that underpin terminology use, which was incorporated into the design of the qualitative phase. The statistically significant results of chi-square testing are subsequently presented in Section 5.4, showing the relationships between the frequency of terminology use and eight clinician-related factors. The chapter is summarised with a brief appraisal of the results. Further discussion of the findings combined with the outcomes of the qualitative phase will be presented in Chapter 7.

## 5.1 Representativeness of the Sample

The 374 responses accrued by the survey represents 3.9% of the approximate total population of 9648 SLTs working with paediatric clients in the UK (Gascoigne, 2006). The HCPC does not hold information that differentiates SLTs based on adult or paediatric client groups. To check the representativeness of the sample, the age and gender data for participants were compared with that held by HCPC (HCPC, 2017) of all SLTs practising in the UK (n = 16,081). Table 5-1 shows the raw values and as a percentage of the sample to which they relate, in order to facilitate direct comparison.

| **Demographic** | **Details** | **HCPC Data** | **Survey Responses** |
|---|---|---|---|
| **TOTAL** | | **16,081 (100%)** | **374 (100%)** |
| GENDER | Male | 426 (2.6%) | 7 (1.9%) |
| | Female | 15,655 (97.4%) | 364 (97.3%) |
| | Prefer not to say/Other | n/a | 2 (0.8%) |
| AGE | 20 - 29 years | 3309 (21.0%) | 84 (22.5%) |
| | 30 - 39 years | 5462 (34.0%) | 129 (34.5%) |
| | 40 - 49 years | 3698 (23.0%) | 22.7 (22.7%) |
| | 50 - 59 years | 2849 (17.7%) | 18.4 (18.4%) |
| | 60 - 69 years | 710 (4.3%) | 6 (1.6%) |
| | 70 years + | 12 (0.0%) | 0 (0.0%) |
| | Prefer not to disclose | n/a | 1 (0.3%) |

*Table 5-1 Data from HCPC and survey sample for age and gender, 2017*

Although most percentage values are relatively similar, SLTs over the age of 60 are under-represented in the survey sample. A possible explanation for the age disparity in the sample is that 66.7% of the 6 survey participants over the age of 60 reported not attending CENs. This is much larger than the 22.7% who reported not attending CENs across all age groups. If a large proportion of SLTs over 60 does not attend CENs, it is possible that SLTs in this age group were missed in recruitment, as contact with SLTs via CENs was a key recruitment strategy. Given the very small numbers, this suggestion is made tentatively.

## 5.2 Clinician-Related Factors

As described in the previous chapter, the data obtained by the survey were combined pragmatically into groups prior to analysis. As there were no missing data, each variable accrued a total number of 374 data points. Grouping (by variable) is listed in Table 5-2, which shows the raw values and values as a percentage of the whole sample.

| **Variable** | **Group** | **Data Points (% of total sample)** |
|---|---|---|
| UK Region | South England | 185 (49.5%) |
| | Midlands | 79 (21.1%) |
| | North England | 49 (13.1%) |
| | Wales | 18 (4.8%) |
| | Scotland | 36 (9.6%) |
| | Northern Ireland | 7 (1.9%) |
| Employment Sector | Multiple | 25 (6.7%) |
| | NHS | 223 (59.6%) |
| | School | 30 (8.0%) |
| | University clinic | 11 (2.9%) |
| | Privately employed | 26 (7.0%) |
| | Self-employed | 44 (11.8%) |
| | Other | 15 (4.0%) |
| Clinical Specialism | Multiple | 240 (64.2%) |
| | Other, or no specialism | 33 (8.8%) |
| | Fluency | 2 (0.5%) |
| | Speech | 26 (7.0%) |
| | Language | 73 (19.5%) |
| Setting of Practice | Multiple | 251 (67.1%) |
| | Other | 14 (3.7%) |
| | Client's homes | 5 (1.3%) |
| | Clinics | 20 (5.3%) |

| | | |
|---|---|---|
| | Specialist schools | 23 (6.1%) |
| | Mainstream schools | 61 (16.3%) |
| University Attended | Other (overseas) | 17 (4.5%) |
| | Other (UK) | 7 (1.9%) |
| | Pre-1992 UK | 207 (55.3%) |
| | Post-1992 UK | 143 (38.2%) |
| Initial Period of Registration | 1970-1969 | 4 (1.1%) |
| | 1980-1989 | 33 (8.8%) |
| | 1990-1999 | 54 (14.4%) |
| | 2000-2009 | 129 (34.5%) |
| | 2010-2019 | 154 (41.2%) |
| Access to research | Able to access sufficient research | 155 (41.4%) |
| | Difficult to access research | 37 (9.9%) |
| | Difficult to find time to access research | 176 (47.1%) |
| | Other | 6 (1.6%) |
| CEN Attendance | Yes | 289 (77.3%) |
| | No | 85 (22.7%) |

*Table 5-2: Number of data points per group in the survey (clinician-related factors)*

## 5.3 Frequency of Terminology Use

Descriptive statistics were applied to the survey data in order to gain an overview of the use of diagnostic terminology reported by participants. In the analysis of responses, it is noted that differentiating Likert items is arbitrary and, as discussed in Chapter 4, interpretation of linguistic terms is subjective. Research has shown that midscale Likert items for an odd number of available items (in this case *sometimes*) can incite variable interpretations across participants (e.g. Bocklisch et al., 2012). However, if responses *rarely* and *never* are assumed to indicate almost no use of the term in practice, combining these responses can give an indication of which terms are used with very low frequency in UK SLT clinical practice. In contrast, combining the response items *sometimes*, *often*, and *always* for each term can show the proportion of the sample that uses the term at least sometimes in clinical practice. This provides a useful means to compare terms and indicate which are currently in use in the UK.

For speech, language and fluency, a percentage frequency distribution was generated using clustered columns in Microsoft Excel. Frequency distributions provide a visual representation of the data, yielding an early opportunity to observe any suggestive patterns across the data. For each term displayed in Figures 5-1 (speech), 5-3 (language) and 5-5 (fluency) throughout the chapter, the data points for each Likert response item are displayed as a percentage of the total sample. Rather than using the raw scores, percentages demonstrate the distribution of results in a visually comprehensible manner that can be readily compared across different terms.

Weighted values for each Likert item were summed to demonstrate the relative popularity of each term, as shown in bar graphs (Figures 5-2, 5-4 and 5-6). This was achieved by assigning a value of 0-4 to Likert response items: (0 = *never*, 1 = *rarely*, 2 = *sometimes*, 3 = *often*, 4 = *always*), in accordance with the ordinal nature of this type of response scale (Harpe, 2015). The highest possible total for any term is thus $374 \times 4 = 1496$ (indicating 100% of the sample selecting *always* on the Likert scale, and the lowest possible total is $374 \times 0 = 0$ (indicating 100% of the sample selecting *never*).

### 5.3.1 Speech Terms

Figure 5-1 shows the distribution of Likert items as percentages for each speech-related diagnostic term presented in the survey. Bars display results *never* to *always* from left to right for each term.

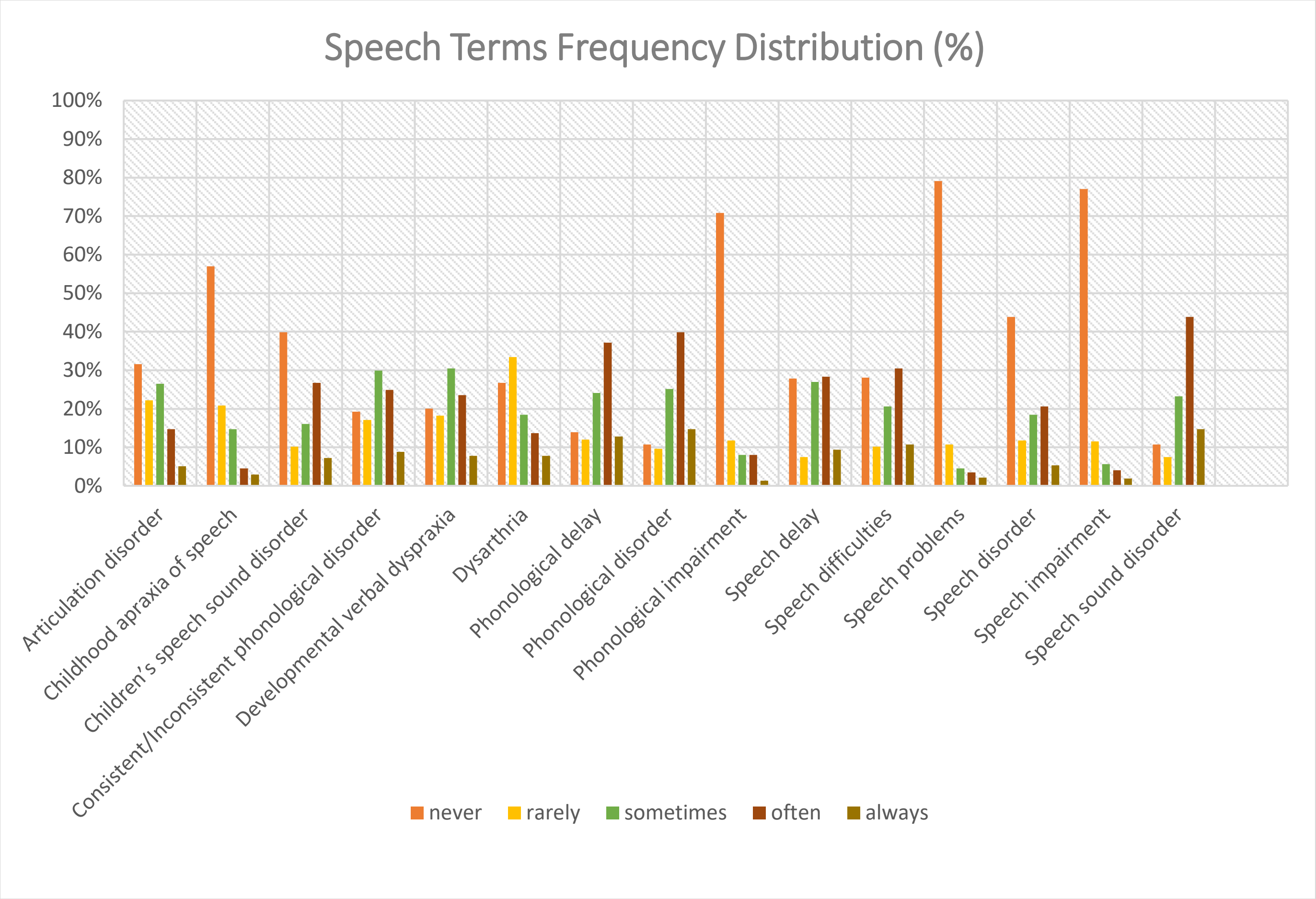


*Figure 5-1: Clustered column showing the distribution of usage across diagnostic terms for speech*

Four terms yielded the response *never* from over half of the participants, indicating that some of the terms identified through the literature review and coproduction are actually used sparsely in practice. To distinguish which terms are currently in use, the response items *sometimes, often* and *always* can be combined to create the group "used at least sometimes". A distinction was made to compare terms by the proportion of responses indicating "used at least sometimes". The following seven terms were used at least *sometimes* in clinical practice by over half of participants (percentages indicate the proportion of the sample using the term at least *sometimes*): "speech sound disorder" (82%), "phonological disorder" (80%), "phonological delay" (74%), "speech delay" (65%), "consistent/inconsistent phonological disorder" (64%), "developmental verbal dyspraxia" (62%) and "speech difficulties" (62%).

Figure 5-2 shows the relative popularity of the speech terms across the sample. As previously noted, response items *never – always* were assigned a weighted value of 0-4 (respectively) and values were combined for each term to produce a total score, displayed by an individual bar in the graph. The results displayed clusters of popularity; this is visually represented in colours blue, orange and grey. Whilst relatively arbitrary, grouping was data-driven and provides some useful insight into the results. A distinction was made between popular terms with 50% of responses in this category, a neutral group (20-50%), and an unpopular group (<20%).

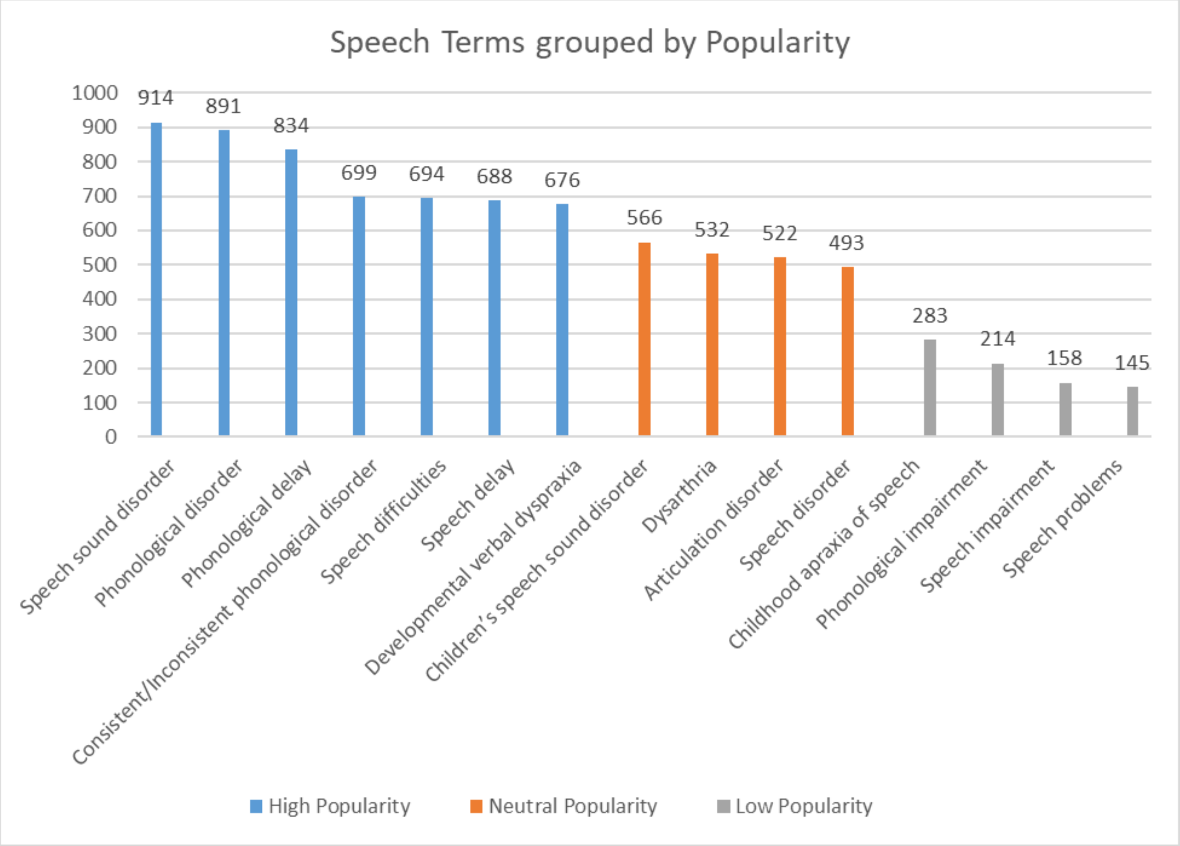


*Figure 5-2 The relative popularity of speech terms from the survey*

The three terms that participants in this survey reported using the most frequently in practice were "speech sound disorder", "phonological disorder", and "phonological delay". The definitions of these terms are similar but not necessarily interchangeable, depending on how clinicians interpret terms and associated criteria. It is evident that the qualifiers disorder and delay were popular in this sample, yet impairment was a relatively unpopular term, both when paired with speech and phonological. Possible reasons for this will be discussed in Chapter 7.

### 5.3.2 Language Terms

The frequency distribution shown in Figure 5-3 demonstrates the reported usage of language terms. Of the 17 terms, 10 were reported to be very infrequently used in practice, accruing *never* responses from over half of the sample, suggesting that many of the research terms identified during survey development are not actually frequently applied in clinical practice.  This discrepancy between terms popular in research and the findings for practice might reflect a lack of cohesion - or a temporal shift.  As with the analysis of speech terms, a distinction has been drawn between terms used at least *sometimes* by combining *sometimes, often* and *always* responses. Five terms were found to be used at least sometimes by over half of the sample (the percentages shown indicate the proportion of the sample using the term at least sometimes): "developmental language disorder" (88%), "expressive language disorder" (61%), "language delay" (66%), "language difficulty receptive/expressive" (81%) and "language disorder" (72%).

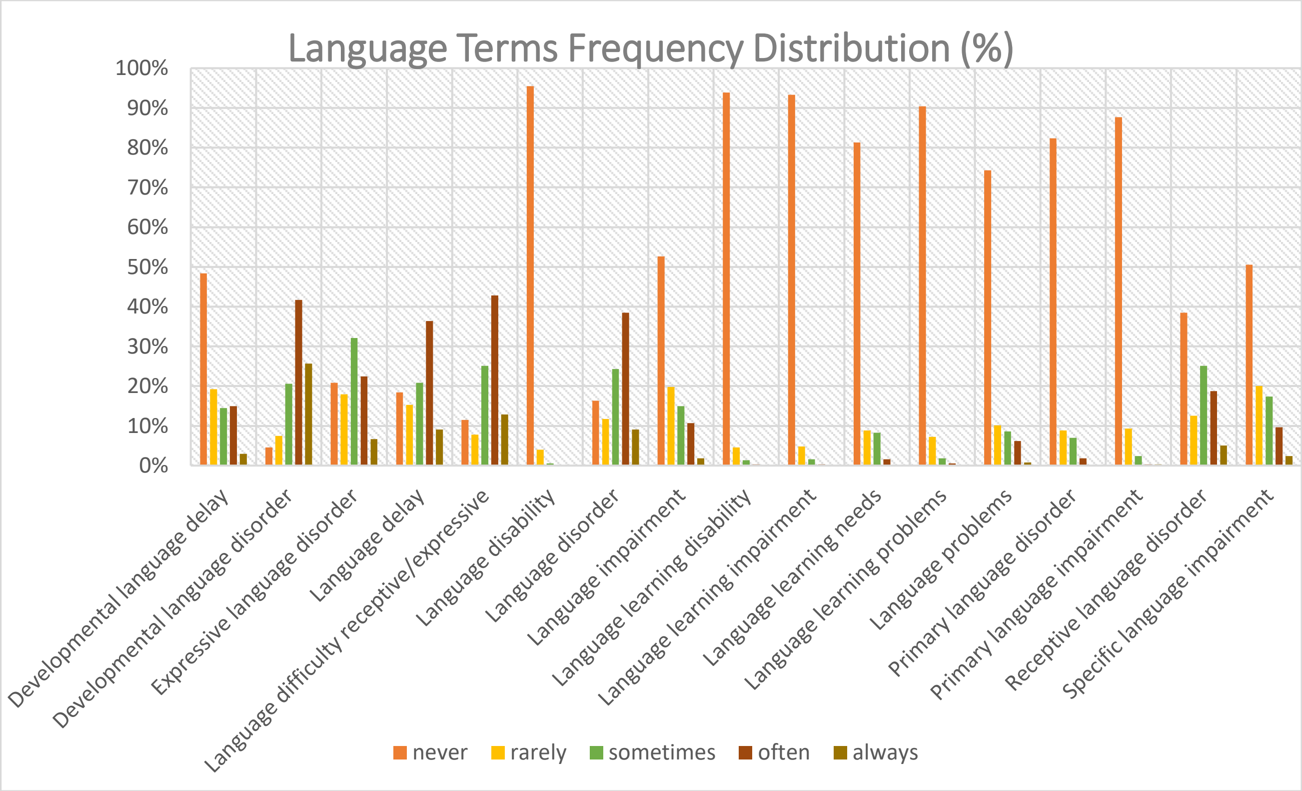


*Figure 5-3 Response distribution as a percentage by term for language*

Figure 5-4 shows the relative popularity of terms presented in the survey; with a possible range of 0-1496. As with speech terms, results have been clustered by popularity - with the same ranges - to stratify the results. Terms with at least 50% of the total possible grouped as highly popular (blue), 20-50% represent a neutral group (orange), and less than 20% are unpopular terms (grey).

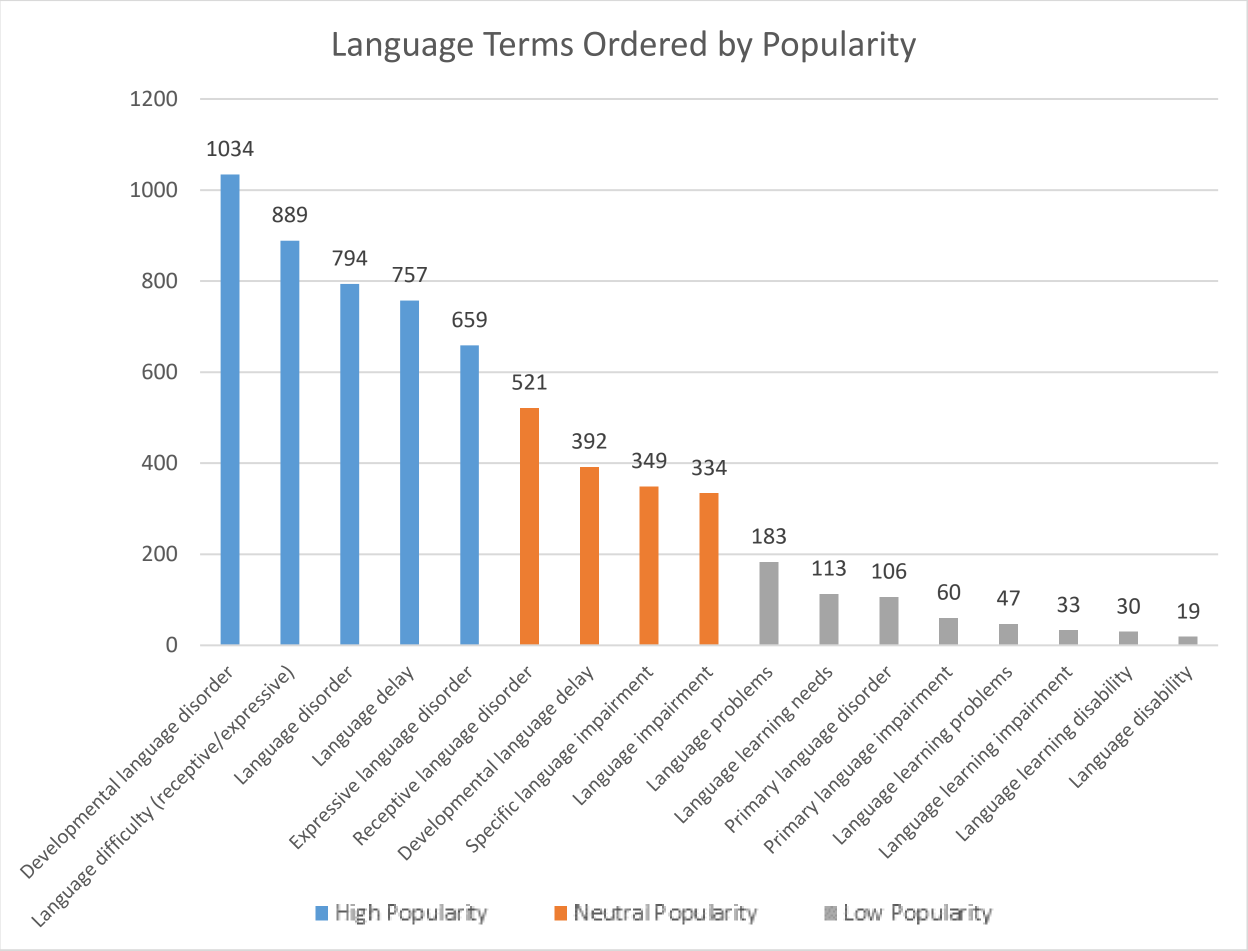


*Figure 5-4 Relative popularity of language terms from the survey*

Some patterns in terminology usage can be noted. The terms disability, impairment, problems and needs were very unpopular. As with speech, the most popular terms included the qualifiers disorder and delay. These observations will be considered further in the discussion presented in Chapter 7.

### 5.3.3 Fluency Terms

It was demonstrated in Chapter 4 that there appear to be fewer diagnostic terms for fluency relative to speech and language, and only 6 terms were investigated by the survey for fluency, compared to speech (15) and language (17). It is immediately apparent that the *never* responses are not as dominant compared to response distributions for speech and language (see Figures 5-1 and 5-3). Figure 5-5 indicates that the distribution of responses varied considerably across terms.

Terms that accrued combined response items *sometimes, often* or *always* by more than 50% of the sample were: “dysfluency” (93%) and “stammering” (91%) and “normal nonfluency” (53%).

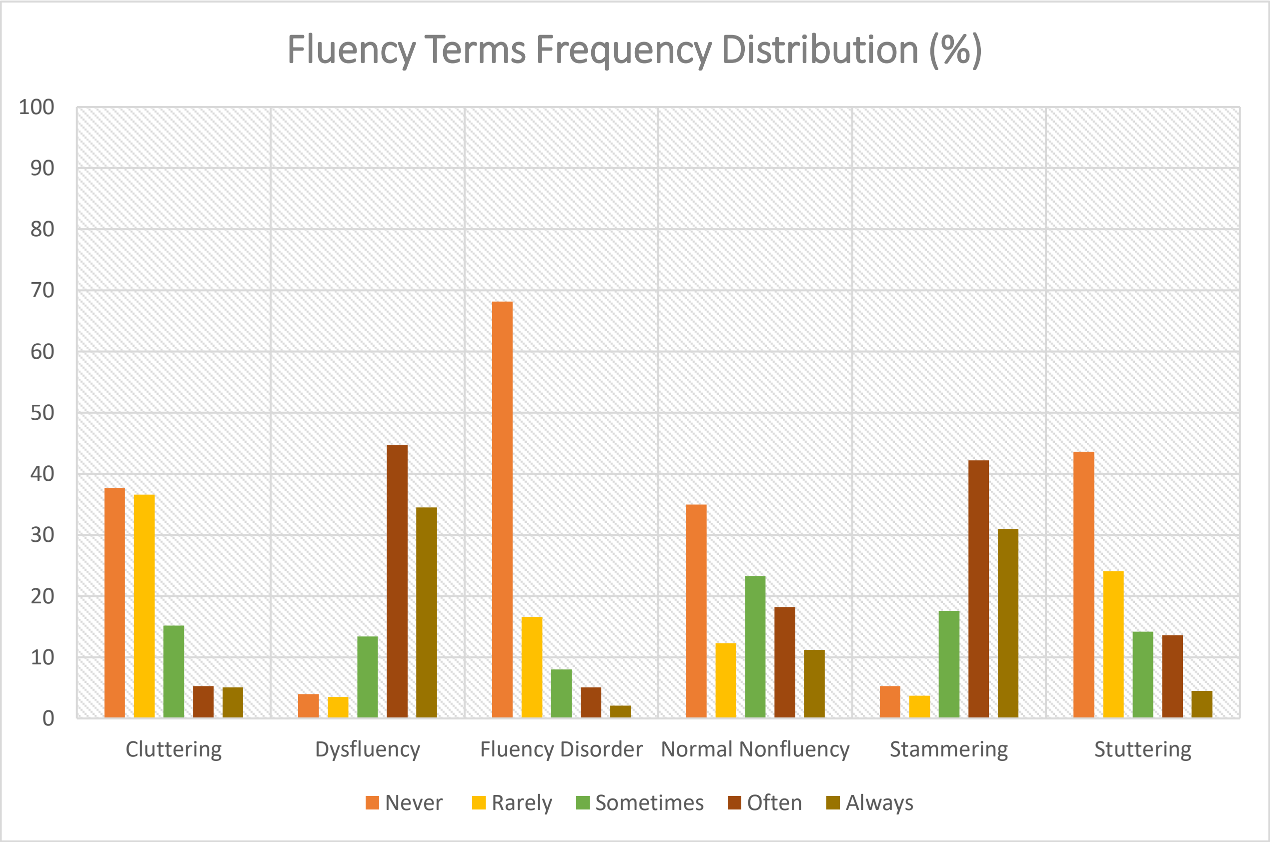


*Figure 5-5: Clustered column showing the distribution of frequency across diagnostic terms for fluency*

Figure 5-6 shows the relative popularity of terms when all response values (*never – always*; 0-4) were summed. The possible range of popularity scores is 0-1496. Terms with at least 50% of the total possible grouped as highly popular (blue), 20-50% represent a neutral group (orange), and less than 20% are unpopular terms (grey). It is apparent that the terms "dysfluency" and "stammering" were used considerably more than other terms, which reflects RCSLT terminology (RCSLT, 2018a).

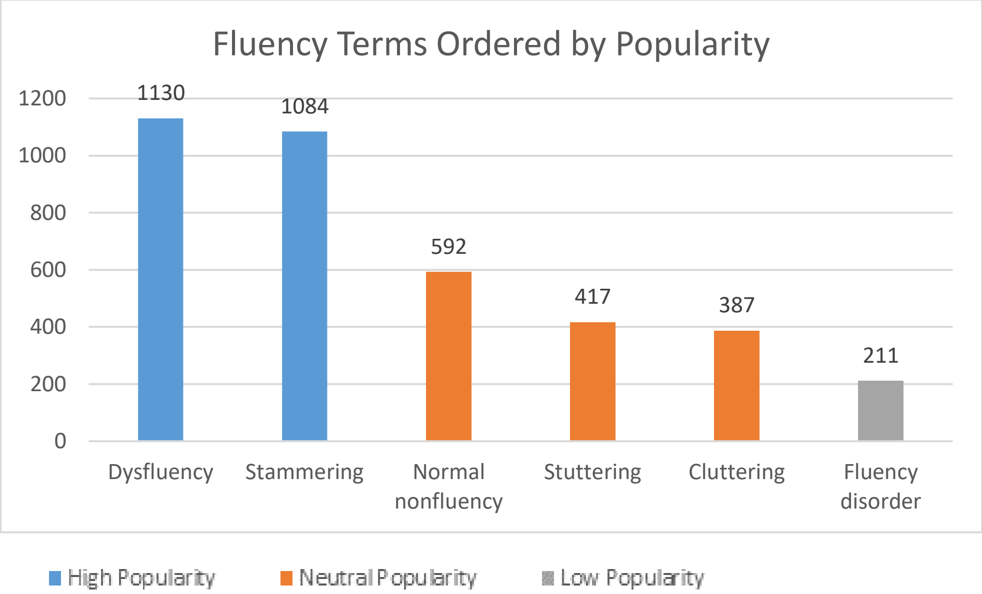


*Figure 5-6 Relative popularity of fluency terms from the survey*

### 5.3.4 “Other” Terms

As part of the survey, participants were asked to report any other terms that they use in practice that were not provided as a response option. The terms submitted by participants are presented in Table 5-3. Where the same term was submitted by multiple participants, the number of responses is included in the adjacent column. Under the category of speech, participants reported using 38 additional terms, with the most common being "speech sound difficulties" (22 reports), "articulation difficulties" (9 reports) and "speech sound delay" (9 reports). For language, participants reported 40 additional terms, which included "speech, language and communication needs" (25 reports), "word finding difficulties" (12 reports) and “language disorder associated with X” (7 reports). There were only 15 other terms reported for fluency, including “bumpy speech” (12 reports) and “developmental disfluency” *(sic)* (5 reports), which implies that there are fewer terms in use for diagnoses pertaining to fluency. An alternative explanation for this could be that participants in this sample worked with fewer clients in the area of fluency. It is noted that only 59 participants (15.8%) reported a clinical specialism of fluency compared to 258 (69.0%) for speech and 307 (82.1%) for language (multiple specialisms were allowed).

Many of the terms reported were generic terms for communication, such as SLCN. Some included variants on the word which indicates the impairment such as "speech sound errors" or an embellished version, for example, "specific language difficulties", where only "language difficulties" had been offered. Most were only slight variations on terms provided in the survey. Some were terms that may not have been used as a diagnosis *per se*, but were descriptive of a client’s presentation, such as “issues with speech clarity”. This is a particularly interesting finding and will be pursued further in interviews in the next phase of the research.

| Speech Terms | # | Language Terms | # | Fluency Terms | # |
|---|---|---|---|---|---|
| Articulation difficulties | 9 | Associated language disorder | | Age appropriate dysfluency | |
| Articulation impairment | | Delayed development of language | 2 | Bumpy speech | 12 |
| Atypical development of speech sounds | | Delayed language development | 2 | Developmental disfluency | 5 |
| Cleft speech characteristics | | Delayed speech and language development | | Developmental stammer | |
| Consistent/inconsistent speech sound disorder | | Developmental language difficulties | | Difficulties with fluency | |
| Delayed speech | | Difficulty understanding spoken language | | Fluency difficulties | 3 |
| Delayed speech development | | Difficulty with language | | Bumpy talking | |
| Delayed speech sound development | 2 | Difficulty with their sentences | | Non-transient stammering | |
| Delayed speech sounds | 2 | Difficulty with understanding parts of language | | Nonfluent | |
| Delayed/disordered speech sound profile | | Disordered language development | | Normal disfluency | 2 |
| Developmental language disorder | | Disordered profile of language | | Occasional disfluency | |
| Developmental speech sound disorder | | Expressive/receptive language delay | | Stammering behaviours | |
| Disordered speech development | | Expressive difficulties using language | | Transient stammering | |
| Disordered speech sound development | | Language and communication needs | | Typical dysfluency | |
| Features of Developmental Verbal Dyspraxia | 2 | Language delayed in line with learning | | Typical non-fluency | |
| Immature articulatory praxis | | Language disorder associated with X | 7 | | |
| Immature speech sounds | | Language disorder in the context of X | | | |
| Inconsistent speech disorder | | Language needs | 2 | | |
| Inconsistent speech sound disorder | | Language skills not developing as they should | | | |
| Inconsistent/consistent articulation errors | | Late talker | 3 | | |
| Issues with speech clarity | | Limited language skills | | | |
| Motor speech difficulty | | Mild/moderate/severe language difficulty | | | |
| Persistent speech sound error/disorder | | Mild/moderate/significant receptive /expressive language difficulties | | | |
| Phonological awareness difficulties | | Phonological disorder | | | |
| Phonological processing difficulties | | Pragmatic language disorder | | | |
| Residual speech sound error | | Pragmatic language impairment | | | |

| | | | | | |
|---|---|---|---|---|---|
| Severe speech disorder | 3 | Present with features of a possible developmental language disorder | | | |
| Significant speech sound difficulties following a disordered pattern | | Receptive language delay | 2 | | |
| Specific speech disorder | | Receptive language difficulties | | | |
| Specific speech sound difficulties | | Receptive difficulties understanding and processing language | | | |
| Speech delay | | Semantic difficulties | | | |
| Speech difficulties | | Sematic (sic) pragmatic language difficulties/disorder | | | |
| Speech disorder with features of developmental verbal dyspraxia | | Significant language difficulties that are following a disordered pattern | | | |
| Speech sound delay | 9 | Specific language difficulties | | | |
| Speech sound difficulties | 22 | Specific receptive language disorder | | | |
| Speech sound errors | | Speech and language needs | | | |
| Speech sound production difficulties | | Speech language communication needs | 25 | | |
| Verbal dyspraxia | 2 | Spoken language difficulties | | | |
| | | Understanding of language difficulties | | | |
| | | Word finding difficulties | 12 | | |

*Table 5-3 Other diagnostic terms reported by survey participants*

## 5.4 Clinician-Related Factors and Terminology Use

The results of chi-square ($\chi^2$) testing have been used to interrogate the null hypothesis ($H_0$) for the relationships between dependent and independent variables. The $\chi^2$ statistic indicates the strength of the relationship between variables, and the effect size of associations are determined by the Phi ($\phi$) coefficient for 2 x 2 crosstabs and Cramérs $v$ for crosstabs larger than 2 x 2 (Agresti, 2007). Possible values of both $\phi$ and Cramér's $v$ lie between 0 and 1, with proximity to 1 indicating a larger magnitude of association. Values of $\phi$ may lie between -1 and 1 but are mathematically symmetrical, so negative values may be interpreted using the same criteria (Davenport Jr and El-Sanhurry, 1991). Table 5-4 shows suggested interpretation descriptors offered by Cohen (1988) and Rea and Parker (1992). The categories provided by Rea and Parker (1992) are used for the results of the survey owing to the extra granularity offered.

| Reference | Values | Recommended interpretation |
|---|---|---|
| Cohen (1988) | 0.1 | Small effect size |
| | 0.3 | Medium effect size |
| | 0.5 | Large effect size |
| Rea and Parker (1992) | $0 \leq v < 0.1$ | Negligible association |
| | $0.1 \leq v < 0.2$ | Weak association |
| | $0.2 \leq v < 0.4$ | Moderate association |
| | $0.4 \leq v < 0.6$ | Relatively strong association |
| | $0.6 \leq v < 0.8$ | Strong association |
| | $0.8 \leq v \leq 1.0$ | Very strong association |

*Table 5-4 Effect size interpretation of Phi and Cramérs v values*

The $H_0$ for all relationships is that there is no association between the independent variable and the frequency of use of the term under consideration. Associations for which the null hypothesis ($H_0$) could be rejected with a *p*-value of <0.05 are reported in full in Tables 5-5, 5-8 and 5-11. Associations that did not reach statistical significance are located in Appendix 7. The standardised residuals show the location of the strongest relationships in the data for each association. Standardised residuals with relatively high values suggest a large magnitude of difference, thus indicating a strong relationship. For each statistically significant result, the largest residual and any residuals that exceed the value of 2.0 are reported, as this is generally accepted as the threshold value for a strong association (Agresti, 2007).

As previously discussed, the data for many terms were considerably skewed towards one response item on the Likert scale. For example, the term "language disability" yielded 95% of responses as *never.* Such terms regularly violated the fourth assumption of the chi-square test for independence, which states that at least 80% of expected values ($E_i$) in the frequency table should have a count of at least 5. As recommended by Pallent (2013) and Field (2009), a Fisher's exact test was performed on these relationships, which is explicitly stated in the reporting of results. The following sections report the results of chi-square testing for speech, language and fluency terms investigated by the survey and the following independent variables:

- UK region
- Employment sector
- Clinical specialism
- Setting of practice
- University type (pre/post-1992)
- Initial registration with the professional body
- Perceived access to research
- CEN attendance

Given that some tests failed the fourth assumption of the chi-square test, Fisher's exact tests were performed across the data to produce a consistent set of outcomes. Unlike the chi-square test, Fisher's does not produce a test statistic, because it does not make assumptions about the distribution underpinning it. Instead, the *p*-value is calculated directly. The results with true and marginal statistically significance ($p<0.10$) were used to inform a binary logistic regression, with the aim of identifying how the independent variables interact.

### 5.4.1 Chi-Square Analysis of Speech Terms

The results of chi-square testing for the 15 speech terms investigated by the survey and the independent variables are reported in Table 5-5, which provides an overview of the statistically significant association for speech terms. The value of $\chi^2$ is shown in bold in the table with the associated $p$-value. Any $p$-values less than 0.05 are deemed statistically significant, and the $H_0$ can be rejected. The values for associations that did not reach the statistical significance can be found in Tables 1-15 in Appendix 7. All tests that were statistically significant met the fourth assumption of the chi-square test. The values of associations with weak effect size, according to Rea and Parker (1992) are highlighted in light blue; moderate associations are shaded orange.

| **Speech Terms** | **UK Region** | **Employment Sector** | **Clinical Specialism** | **Setting of Practice** | **Initial Registration** |
|---|---|---|---|---|---|
| Articulation Disorder | | 🟦 **13.33**<br>($p$ = 0.021) | | | |
| Childhood Apraxia of Speech | 🟧 **24.08**<br>$p$ = 0.0005 | 🟦 **12.25**<br>$p$ = 0.031 | | | |
| Consistent/ Inconsistent Phonological Disorder | | 🟧 **18.77**<br>$p$ = 0.002 | 🟧 **14.19**<br>$p$ = 0.007 | | |
| Developmental Verbal Dyspraxia | | | | | 🟦 **12.80**<br>$p$ = 0.005 |
| Phonological Disorder | 🟦 **12.55**<br>$p$ = 0.028 | | | | |
| Phonological Impairment | | | | 🟦 **11.09**<br>$p$ = 0.026 | |
| Speech Delay | 🟦 **11.52**<br>$p$ = 0.042 | | | | |
| Speech Disorder | | 🟧 **16.37**<br>$p$ = 0.006 | | | |

🟦 = Weak association

🟧 = Moderate association

*Table 5-5 Associations between variables meeting statistical significance for speech terms*

Table 5-6 has been produced to show the nature of associations between the dependent and independent variables for use of speech terminology. This includes the effect size and its corresponding category according to Rea and Parker (1992) (see Table 5-4). The standardised residuals indicate which groups produced the strongest associations within each crosstab. The direction (-/+) of the standardised residual showed the relative likeliness that a participant in that group would use the term under investigation, compared to all other groups, which is also reported:

| **Speech Term** | **Clinician-related factor** | **Value of $X^2$** | **Effect size** | **Strongest association** | **Relative likeliness to use** |
|---|---|---|---|---|---|
| Articulation disorder | Employment sector | 13.33 | Weak (0.16) | Employed by schools | More |
| | | | | Employed by NHS | Less |
| Childhood apraxia of speech | UK region | 24.08 | Moderate (0.25) | Northern Ireland | More |
| | Employment sector | 12.25 | Weak (0.18) | Employed by NHS | Less |
| Consistent/ inconsistent phonological disorder | Employment sector | 18.77 | Moderate (0.22) | Employed by multiple sectors | More |
| | | | | Employed by schools | Less |
| | Clinical specialism | 14.19 | Moderate (0.20) | Speech specialism | Less |
| Developmental verbal dyspraxia | Initial registration | 12.80 | Weak (0.19) | Registered 2010-2019 | Less |
| Phonological disorder | UK region | 12.55 | Weak (0.18) | Southern England | Less |
| Phonological impairment | Setting of practice | 11.09 | Weak (0.17) | Practising in mainstream schools | Less |
| Speech delay | UK region | 11.52 | Weak (0.18) | Scotland | Less |
| Speech disorder | Employment sector | 16.37 | Moderate (0.21) | Employed by multiple sectors | Less |

*Table 5-6 Summary of details for associations that met statistical significance – speech terms*

### 5.4.2 Logistic Regression: Speech Terms

In order to inform the variables to investigate within a logistic regression, a series of Fisher's exact tests were applied to the data. Unlike the chi-square test, Fisher's does not produce a test statistic (Kim, 2017); and therefore it is typical to only report the *p*-value. Due to the highly conservative nature of the Fisher's test, it is often recommended that *p*-values levels should not be treated as fixed, but as upper limits (Little, 1989; Yates, 1984). Therefore, outcomes approaching significance, (*p* <0.10) were also used to inform the model. As shown in Table 5-7, very few *p*-values reached statistical significance. Statistically significant results are indicated in yellow; those approaching significance (*p* <0.10), in green.

| **SPEECH** | UK Region (α =.010) | Employment sector (α =.010) | Clinical specialism (α =.013) | Setting of practice (α =.013) | University (α =.025) | HCPC Registration (α =.016) | Access to Research (α =.016) | CEN Attendance (α =.05) |
|---|---|---|---|---|---|---|---|---|
| Articulation disorder | .319 | .019 | .702 | .766 | .301 | .532 | .778 | .175 |
| Childhood apraxia of speech | .001 | .022 | .251 | .233 | .067 | .275 | .095 | .463 |
| Children's speech sound disorder | .515 | .137 | .252 | .465 | .971 | .405 | .088 | .459 |
| Consistent/ Inconsistent phonological disorder | .321 | .002 | .004 | .266 | .896 | .174 | .435 | .898 |
| Developmental verbal dyspraxia | .066 | .154 | .962 | .604 | .913 | .005 | .316 | .101 |
| Dysarthria | .183 | .243 | .337 | .082 | .971 | .466 | .438 | .378 |
| Phonological delay | .128 | .121 | .135 | .101 | .310 | .108 | .739 | .402 |
| Phonological disorder | .029 | .197 | .054 | .606 | .179 | .577 | .783 | 1.000 |
| Phonological impairment | .082 | .342 | .699 | .014 | .667 | .371 | .168 | .628 |
| Speech delay | .041 | .358 | .820 | .510 | .523 | .338 | .468 | .798 |
| Speech difficulties | .472 | .007 | .223 | .832 | .486 | .286 | .746 | .377 |
| Speech problems | .012 | .098 | .743 | .445 | .508 | .351 | .791 | .546 |
| Speech disorder | .275 | .771 | .890 | .783 | .804 | .734 | .491 | .804 |
| Speech impairment | .698 | .550 | .374 | .114 | .272 | .206 | .406 | .699 |
| Speech sound disorder | .855 | .618 | .056 | .833 | .519 | .852 | .817 | .750 |

*Table 5-7: Outcomes of Fisher's exact tests for speech terms*

All results approaching significance were fed into a binary logistic regression model in SPSS to search for interactions.  As the majority of groups did not contain sufficient data, all tests produced extremely high error rates.  Consequently, no meaningful conclusions can be drawn from this analysis.

### 5.4.3 Chi-Square Analysis of Language Terms

Table 5-8 shows the statistically significant associations in the data. Associations with a *p*-value below the predetermined $\alpha$ of 0.05 are reported; those that did not reach statistical significance are reported in Tables 16-32, Appendix 7. Values of $\chi^2$ are indicated in bold. Some associations did not meet the fourth assumption of the chi-square test, and a Fisher's exact test was instead used - indicated by three asterisks (***) in Table 5-8. The *p*-values for Fisher's tests reported have undergone a Bonferroni correction. Associations with weak effect size, when compared to the classification suggested by Rea and Parker (1992), are highlighted in light blue; moderate associations are shaded orange.

| **Language Terms** | **UK Region** | **Clinical Specialism** | **Employment Sector** | **Setting of Practice** | **Initial Registration** | **CEN Attendance** |
|---|---|---|---|---|---|---|
| Developmental language delay | **20.96**<br>$p = 0.001$ | | **18.48**<br>$p = 0.002$ | **16.96**<br>$p = 0.002$ | | |
| Developmental language disorder | **21.19**<br>$p = 0.001$ | | | | | |
| Language delay | **25.00**<br>$p = 0.005$ | | | | | |
| Language disorder | | **11.35**<br>$p = 0.023$ | | | | |
| Language Impairment | **17.07**<br>$p = 0.004$ | | | **16.09**<br>$p = 0.003$ | | |
| Language problems | **14.04**<br>$p = 0.015$ | | | ***<br>$p = 0.049$ | **9.35**<br>$p = 0.025$ | |
| Primary language disorder | | | ***<br>$p = 0.002$ | | | |
| Primary language impairment | | | ***<br>$p = 0.003$ | | ***<br>$p = 0.038$ | |
| Specific language impairment | **20.05**<br>$p = 0.001$ | | **17.03**<br>$p = 0.004$ | | **9.99**<br>$p = 0.019$ | **4.69**<br>$p = 0.030$ |

🟦 = Weak association *** = Fisher's exact test

🟧 = Moderate association

*Table 5-8 Associations between variables meeting statistical significance for language terms*

Table 5-9 has been produced to show the pattern of associations between the dependent and independent variables for participants' reported use of language terminology:

| Language Term | Clinician-related factor | Value of $\chi^2$ | Fisher's exact | Effect size | Strongest association | Relative likeliness to use |
|---|---|---|---|---|---|---|
| Developmental language delay | UK region | 20.96 | | Moderate (0.24) | Northern Ireland | More |
| | | | | | Southern England | Less |
| | Employment sector | 18.48 | | Moderate (0.22) | Employed by multiple | More |
| | Setting of practice | 16.96 | | Moderate (0.21) | Mainstream schools | Less |
| Developmental language disorder | UK region | 21.19 | | Moderate (0.21) | Southern England | More |
| | | | | | Wales | Less |
| Language delay | UK region | 25.00 | | Moderate (0.26) | Southern England | Less |
| Language disorder | Clinical specialism | 11.35 | | Weak (0.17) | Other or no specialism | Less |
| Language Impairment | UK region | 17.07 | | Moderate (0.21) | Northern England | More |
| | Setting of practice | 16.09 | | Moderate (0.21) | Other settings | More |
| Language problems | UK region | 14.04 | | Weak (0.19) | Northern England | More |
| | | | | | Southern England | Less |
| | Setting of practice | | 9.01 | Weak (0.16) | Other settings | More |
| | Initial registration | 9.35 | | Weak (0.16) | Registered 1960-1989 | More |
| Primary language disorder | Employment sector | | 17.57 | Moderate (0.22) | Employed by multiple | More |
| | | | | | Employed privately | More |
| Primary language impairment | Employment sector | | 15.06 | Moderate (0.24) | Employed privately | More |
| Specific language impairment | UK region | 20.05 | | Moderate (0.23) | Wales | More |
| | | | | | Northern Ireland | More |
| | Employment sector | 17.03 | | Moderate (0.21) | Employed by schools | More |
| | | | | | Employed privately | More |
| | Initial registration | 9.99 | | Weak (0.16) | Registered 2010-2019 | Less |
| | CEN attendance | 4.69 | | Weak (0.11) | Did not attend CENs | More |

*Table 5-9 Summary of details for associations that met statistical significance – language terms*

### 5.4.4 Logistic Regression: Language

Similar to the outcomes of the Fisher's exact tests applied to speech terms, very few *p*-values reached statistical significance. Those approaching significance (<0.10), are shown in green, and truly statistically significant results are shown in yellow in Table 5-10:

| **LANGUAGE** | UK Region (α =.010 | Employment sector (α =.010) | Clinical specialism (α =.013) | Setting of practice (α =.013) | University (α =.025) | HCPC Registration (α =.016) | Access to Research (α =.016) | CEN Attendance (α =.05) |
|---|---|---|---|---|---|---|---|---|
| Developmental language delay | .001 | .002 | .060 | .002 | .638 | .392 | .460 | .623 |
| Developmental language disorder | .001 | .613 | .022 | .035 | .099 | .905 | .040 | 0.65 |
| Expressive language disorder | .190 | .627 | .192 | .116 | .366 | .180 | .109 | .314 |
| Language delay | .000 | .123 | .739 | .013 | .497 | .732 | .545 | .091 |
| Language difficulty receptive/ expressive | .143 | .865 | .028 | .882 | .614 | .407 | .253 | .533 |
| Language disability | .108 | 1.000 | .338 | .176 | .270 | .127 | 1.000 | 1.000 |
| Language disorder | .218 | .526 | .023 | .312 | .780 | .635 | .968 | .891 |
| Language impairment | .004 | .100 | .761 | .004 | .835 | .670 | .323 | .491 |
| Language learning disability | .155 | .579 | .491 | .580 | .220 | .756 | 1.000 | 1.000 |
| Language learning impairment | .314 | .808 | .435 | .702 | .529 | .428 | .672 | .660 |
| Language learning needs | .016 | .911 | .623 | .663 | .564 | .955 | .486 | .681 |
| Language learning problems | .126 | .437 | .939 | .656 | .859 | .227 | .826 | .690 |
| Language problems | .011 | .719 | .091 | .050 | .847 | .040 | .877 | .865 |
| Primary language disorder | .242 | .002 | .174 | .015 | .766 | .048 | .914 | .665 |
| Primary language impairment | .543 | .003 | .547 | .342 | .330 | .038 | .850 | 1.000 |
| Receptive language disorder | .639 | .312 | .125 | .864 | .142 | .244 | .513 | .065 |
| Specific language impairment | .001 | 005 | .579 | .064 | .649 | .017 | .800 | .022 |

*Table 5-10: Outcomes of Fisher's exact tests for language terms*

All results with a *p*-value <0.10 were fed into a binary logistic regression model to search for interactions. Similar to the outcomes produced for speech, many groups did not contain sufficient data resulting in extremely high error rates.  Therefore, no meaningful conclusions can be drawn from this analysis.

### 5.4.5 Chi-Square Analysis of Fluency Terms

In Section 5.3.3 of this chapter, which covered the descriptive analysis for fluency terms, it was evident that two terms (dysfluency and stammering) were used very frequently in practice, generating a high proportion of combined *sometimes, often* and *always* responses. Given this extreme skew in comparison to other terms, the entropy of the data was very low, and all of the chi-square tests for the other four terms investigated (cluttering, fluency disorder, normal nonfluency and stuttering) violated the fourth assumption. No clinician-related variables were associated with the use of the term dysfluency with statistical significance. Table 5-11 shows the only associations that reached statistical significance for fluency terms:

| **Fluency Terms** | **Setting of Practice** | **Access to Research** |
|---|---|---|
| Stammering | **10.50**<br>*p* = 0.033 | **8.06**<br>*p* = 0.045 |

🟦 = Weak association

🟧 = Moderate association

*Table 5-11 Associations between variables meeting statistical significance for fluency terms*

There is very little difference in the way that groups of participants used each term, indicated by the fact that only two measured relationships reached statistical significance. The terms produced polarised responses of being in use with either high or very low frequency. Table 5-12 shows the nature of statistically significant associations between the dependent and independent variables for participants' use of fluency related terminology:

| **Fluency Term** | **Clinician-related Factor** | **Value of $X^2$** | **Effect size** | **Strongest association** | **Relative likeliness to use** |
|---|---|---|---|---|---|
| Stammering | Setting of practice | 10.50 | Weak (0.17) | Mainstream schools | Less |
| | Access to research | 8.06 | Weak (0.15) | Able to access research | Less |

*Table 5-12 Summary of details for associations that met statistical significance – fluency terms*

### 5.4.6 Logistic Regression: Fluency

Similar to the outcomes of Fisher's exact tests applied to speech and language terms, very few *p*-values reached statistical significance. Those approaching significance (<0.10), are shown in green, and truly statistically significant results are shown in yellow in Table 5-13.

| **FLUENCY** | UK Region (α =.010) | Employment sector (α =.010) | Clinical specialism (α =.013) | Setting of practice (α =.013) | University (α =.025) | HCPC Registration (α =.016) | Access to Research (α =.016) | CEN Attendance (α =.05) |
|---|---|---|---|---|---|---|---|---|
| Cluttering | .263 | .768 | .860 | .643 | .550 | .480 | .675 | .776 |
| Dysfluency | .696 | .372 | .593 | .685 | .552 | .494 | .484 | 1.000 |
| Fluency disorder | .482 | .020 | .783 | .902 | .187 | .482 | .956 | 1.000 |
| Normal non-fluency | .894 | .815 | .855 | .879 | .320 | .069 | .093 | .806 |
| Stammering | .121 | .160 | .057 | .039 | .440 | .861 | .376 | .133 |
| Stuttering | .251 | .099 | .078 | .452 | .740 | .770 | .615 | .507 |

*Table 5-13: Outcomes of Fisher's exact tests for fluency terms*

All results with a *p*-value <0.10 were fed into a binary logistic regression model to search for interactions. Similar to the outcomes produced for speech, many groups did not contain sufficient data resulting in extremely high error rates. Therefore, no meaningful conclusions can be drawn from this analysis.

## 5.5 Summary of Analysis

The results of the survey have shown what terms are used in practice by a sample of SLTs currently practising in the UK. There are a number of limitations associated, and therefore any conclusions must be accepted tentatively considering the small sample size. The main points that can be taken from the analysis include the frequency of use of terms and the clinician-related variables which appear to be most associated with usage of terminology. A wide variety of terms are in use for speech, language and fluency, suggesting that terminological variation does exist in clinical practice. This was less marked in relation to fluency, which reflects the relative stability in terminology over time that was identified through the literature review. Across speech, language and fluency, the popularity of terms did not wholly reflect the use of terms in research as indicated by the literature review. Prime examples of popular research terms which were reportedly used very infrequently by participants include "primary language impairment", "children's speech sound disorder" and "stuttering". Terms that included “delay” or “disorder” were relatively popular for both speech and language, whilst terms that included words such as “disability” and “needs” were relatively unpopular in the sample. A considerable number of terms not included in the survey were reported in the free text box included in the survey. In particular, participants reported using several colloquial terms and phrases diagnostically, which was a surprising finding of the research.

Analysis of the clinician-related variables revealed that some produced considerably more statistically significant associations with terminology use: UK region, clinical specialism, employment sector and setting of practice. This might suggest that workplace characteristics have a stronger bearing on terminology use than initial training, engagement in CEN activity and access to research. Although there is little focus on these areas in consideration of terminology usage in previous research, the findings largely reflect the ideas raised by SLTs in coproduction. The sample size accrued was a major limitation in the analysis of findings, as it was not possible to conduct a viable chi-square test on every association. Furthermore, the application of a logistic regression model to investigate interactive factors was prone to failure, given the uneven spread of the data across groups. However, it was possible to identify key trends in the data which can be used to address the research questions posed. The quantitative findings will be discussed in the context of the extant literature in combination with the qualitative results in Chapter 7. The discussion of both phases will consider whether the qualitative findings confirm the survey outcomes - and if so, seek to explain them by providing rich contextual details.

# CHAPTER 6: THE DIAGNOSTIC APPROACH OF SPEECH AND LANGUAGE THERAPISTS IN THE UK

This chapter presents the findings from interviews with 22 SLTs in themes that were identified from the process of thematic network analysis (TNA) (Attride-Stirling, 2001). As described in Chapter 4, three orders of themes are used to structure the data. Basic themes are low level and describe characteristic aspects of data, whilst organising and global themes express more abstract categories. The 27 basic themes (BTs) were derived from coded interview transcripts. Meaningful relationships between BTs were clustered into 9 organising themes (OTs) which, similarly, were grouped into 3 overarching global themes (GTs). The three GTs identified to represent the core issues from the analysis are:

- **Global Theme 1:** The Introduction of DLD
- **Global Theme 2:** My Practice
- **Global Theme 3:** SLTs as Diagnosticians

This chapter is structured using the three GTs, at which level claims are made about the data. Each GT is introduced with its corresponding claim, and a visual figure to display the structured network of relationships between BTs and OTs that comprise the GT (Figures 6-1, 6-2 and 6-3). Throughout the chapter, GTs (1-3) are separated at the level of OTs (1-9), within which there is a rich discussion of each BT (1-27) to represent the data. Each GT is then concluded with a summary of how the claim materialised from the data. Across the data, there is considerable overlap of ideas, and applying TNA to this data enabled the analysis to capitalise on relationships that occur with meaningful nuances between BTs. These were strongest at the level of OTs, and an additional summarising network of the organising relationships is presented at the end of the chapter in Figure 6-4. The structure of all themes is shown in Table 6-1:

| Global Themes (GTs) | Organising Themes (OTs) | Basic Themes (BTs) |
|---|---|---|
| GT 1:<br>The Introduction of DLD | OT 1: Impetus to use DLD | BT 1: Striving for Consistency<br>BT 2: Awareness Raising and Campaigns<br>BT 3: Improvement on SLI |
| | OT 2: Challenges of DLD | BT 4: Criteria Uncertainty<br>BT 5: System Barriers<br>BT 6: Implementation Barriers |
| | OT 3: Needs of the SLT | BT 7: Support Adapting to Change<br>BT 8: A Cohesive Professional Strategy<br>BT 9: Training, Networking and Support |
| GT 2:<br>My Practice | OT 4: Confidence to Diagnose | BT 10: Fear of Making the Wrong Diagnosis<br>BT 11: Experience in Professional Role<br>BT 12: University Training |
| | OT 5: Needs of the Family | BT 13: Is the Family Ready for Diagnosis?<br>BT 14: Seeking a Name and an Explanation<br>BT 15: The Problem of Jargon |
| | OT 6: Giving the Diagnosis to Clients | BT 16: Individualising the Approach<br>BT 17: Talking to Children<br>BT 18: Avoiding the Stigma |
| GT 3:<br>SLTs as Diagnosticians | OT 7: Diagnostic Politics | BT 19: Working with Non-SLT Professionals<br>BT 20: Education and Health Tensions<br>BT 21: Service Constraints |
| | OT 8: Diagnosis in Speech and Language Therapy | BT 22: The SLT's Client Group<br>BT 23: Use of Clinical Judgement<br>BT 24: Diagnosis: Misaligned? |
| | OT 9: Practical, Theoretical, Social Challenges | BT 25: Feasibility of Assessment<br>BT 26: The Relevance of Evidence<br>BT 27: Time to Talk |

*Table 6-1 Global, organising and basic themes identified in the data*

In the following presentation of the analysis, the main discussion of content occurs at the level of basic themes. Basic themes are each assigned a unique code, which indicates to which organising and global theme it belongs. For example, Basic Theme 9 is denoted by the code "BT 9, OT 4, GT 2", showing that it exists within Organising Theme 4 in Global Theme 2. Basic themes contain illustrative quotes from the data to show how they were developed. Pseudonyms were assigned to participants, and details about their practice can be found in Chapter 4.

## 6.1 Global Theme 1: The Introduction of DLD

Global Theme 1 (GT 1) presents the claim that the introduction of developmental language disorder (DLD) and its associated criteria as recommended by the CATALISE project (Bishop et al., 2016; 2017) was a monumental event that challenged SLTs, and brought to light issues related to their terminology use. The ideas represented within GT 1 cover participants' drive to use the term, challenges encountered in practice, and perceived absence of support. Most participants welcomed the introduction of DLD, and Organising Theme 1 (OT 1): *Impetus to Use DLD* explores the perceived benefits to their practice. Organising Theme 2 (OT 2): *Challenges of DLD* reviews the difficulties that participants encountered in practice as a result of the introduction. Participants shared insight into the support they felt was needed to remediate these difficulties in making the diagnosis, which is presented in Organising Theme 3 (OT 3): *Needs of the SLT*. The thematic organisation of BTs 1-9 and OTs 1-3 within GT 1 is displayed in Figure 6-1. In the sections that follow, each OT will be introduced and basic themes presented in sequence. A summary of ideas concludes the GT and evaluates the claim.

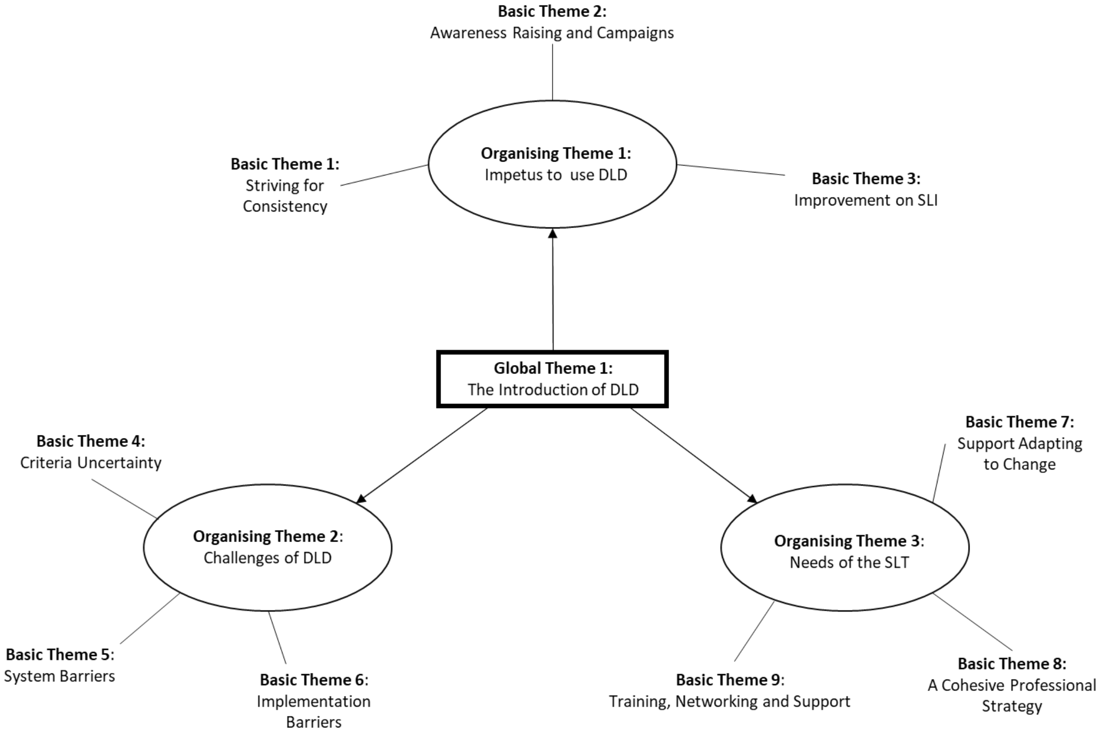


*Figure 6-1 Thematic Network for Global Theme 1: The Introduction of DLD*

### 6.1.1 OT 1: Impetus to Use DLD (The Introduction of DLD)

As shown in Figure 6-1, Organising Theme 1 (*Impetus to use DLD*) was developed from three BTs that relate to interviewees' drive to implement the term DLD in their practice following recommendations made by the CATALISE project. Basic Theme 1: "Striving for Consistency" (BT 1, OT 1, GT 1) explores the view that using the term DLD could increase terminological consistency for language diagnoses, which many participants considered to be an ideal outcome for the profession. As discussed in Basic Theme 2: "Awareness Raising and Campaigns" (BT 2, OT 1, GT 1), another driver for using the term was the increased potential for raising awareness and the positive impact this might have for clients. Basic Theme 3: "Improvement on SLI" (BT 3, OT 1, GT 1), outlines how participants' framed DLD as an improvement on the term and criteria that were previously popular in practice and research, specific language impairment (SLI).

#### *6.1.1.1 BT 1: Striving for Consistency (Impetus to Use DLD; The Introduction of DLD)*

The majority of participants expressed the view that achieving terminological consistency across the profession was ideal and important. Several considered that, for primary language diagnoses, using the term DLD for all children who met the criteria could facilitate this goal. Benefits of consistency were recognised both for clients and research.

> *Dylan: Terminology is important and I can see why it is important in research because researchers have got to be very careful about the group.*

Terminological consistency was discussed in relation to the increased potential to foster connections at a local and national level between families whose child had the diagnosis. Caitlin and Dylan, who worked in language units observed the benefits for several families of having a recognisable diagnostic term:

> *Caitlin: It's nice for them to get that support like "oh we're the parents of children with DLD and we can network together".*

> *Dylan: I saw some of those promotional videos for the DLD campaign and […] some kids were talking about what they had, they said, DLD. They were using it as a label that they were happy to use.*

Some participants reported having previously been less cognizant of their own use of terminology in relation to consistency prior to CATALISE, and several were inclined to use DLD in recognition of the potential benefits yielded by terminological consistency:

> *Laura: Because of the big change in terminology around DLD, I'm more mindful of using that term, whereas in the past I might've used a range of terms.*
>
> *Dylan: I am more comfortable in giving that label of DLD since it's been accepted as a label by - not just speech and language therapists - but psychologists and paediatricians and all sorts of other professionals as well.*

There were participants who portrayed DLD as a broad diagnosis; an overarching diagnostic category encompassing all types of language disorder which may previously have been subtyped (e.g. "expressive language disorder" and "receptive language disorder"). Patricia used the metaphor of an umbrella to describe how DLD represented a diverse range of language needs which was useful for diagnosis and consistency because there were fewer terms to differentiate between in practice.

> *Patricia: Before it was - is it receptive language disorder, expressive language disorder, semantics? The primary presentations lie within that. DLD is the umbrella term.*

The importance of terminological consistency was emphasised by many participants, and there was considerable concern that DLD criteria were not being applied in the same way across the country. Some speculated that there may be differences in how CATALISE criteria were interpreted across the profession, thus hindering consistency:

> *Amanda: If I diagnosed DLD, and a therapist somewhere else nationwide diagnosed DLD, I'd want to know that it means the same thing and not people being subjective.*
>
> *Patricia: Are we all using the same terms? […] I do wonder if we are all describing the same thing when we use the same terminology.*

Whilst a few participants accepted inconsistency as inevitable, others were more hopeful that the outcome of the CATALISE project would improve terminology use. Caitlin considered that, as a result of the change, SLTs would qualify having been trained using congruent terminology and criteria, and therefore communication around language diagnoses would improve:

> *Caitlin: I hope we are a little bit more consistent now by using the term and more people, nurseries and parents will get to understand it. […] As more and more therapists are coming out of uni, that will drive the consistency.*

Heidi iterated that this would require substantial time and active input from SLTs, university teachers, researchers and services to change and use the term, rather than passively waiting on a natural evolution in terminology:

> *Heidi: Students go through the process, become clinicians, then supervise others, and teams change terminology. What used to be an SLI team is now a DLD team. But someone takes ownership of that, goes, "We're renaming". Someone goes "Actually, we're teaching something different now". And people being like, "We're using this in research now". It might be a by-product but I don't think it's naturally evolving - it's people actively doing things.*

Participants were acutely aware of the rationale for the introduction of DLD being to improve consistency, and most supported this goal. They were therefore highly motivated to use it in their practice.

#### *6.1.1.2 BT 2: Awareness Raising and Campaigns (Impetus to Use DLD; The Introduction of DLD)*

This basic theme explores the recognition of the potential for raising public awareness of DLD by using it in practice. It was generally considered that public awareness of DLD was low, and many of the problems that participants discussed were congruent with issues identified in the literature review. Heidi felt that alongside participating in campaigns such as Raising Awareness of Developmental Language Disorder (RADLD) (Bishop et al., 2012), using the term consistently in practice was a strategy for raising awareness:

> *Heidi: DLD is quite important for raising awareness - whether that's in an activist way like RADLD or in a, here's my practice, I'm going to start using this term now.*

Participants talked about the importance of raising public awareness for the identification of language needs, funding for provision from commissioning bodies, and a general understanding of the needs of a person with DLD.

> *Kitty: People need to be more aware of children who are struggling, and it's sadly the only way, isn't it? A diagnosis is the only way for people to accept that these children are out there.*

Raising awareness was also considered beneficial for children receiving the diagnosis as they were able to use it to search for information, such as the resources on the RADLD website. Participants gave examples of clients being able to identify with others who had the same diagnosis, which helped them to understand their language difficulties. Danielle talked about a child who was pleased to be able to recognise that other children had DLD via the RADLD campaign:

> *Danielle: She is pleased to know she has DLD, that explains things for her and she's found helpful videos on the RADLD website and girls that have similar issues to her.*

However, beyond clients and families, SLTs noted that awareness remained poor. A few participants commented that as terms become more widely recognised in the public eye, there was potential for unhelpful social perceptions, or incorrect identification.

> *Charlotte: Nobody else has a clue what we're talking about. At the minute! We're lucky if they've heard of SLI - they certainly haven't heard of DLD.*
>
> *Patricia: DLD will get the same as dyslexia, it's a bit sexy at the moment […] I would not use that term with a lot of people because it's seen as a middle-class excuse for being thick. When people don't know what it means, awareness comes with flipsides.*

Generally it was considered that educating people about DLD was essential as part of raising awareness. Despite these concerns, the dominant view was that increasing public awareness was a desirable outcome, and most considered that using the term DLD contributed to this goal.

#### 6.1.1.3 BT 3: Improvement on SLI (Impetus to Use DLD; The Introduction of DLD)

Part of the reason that the CATALISE project was developed, was the perception that there were multiple terms in use for language diagnoses. Prior to 2017, many NHS services in the UK operated using the term specific language impairment (SLI), although participants recognised that this term was not necessarily widely used. Many participants discussed motivation to use diagnosis in practice as a result of the change from SLI.

> *Kitty: I have used DLD more than I ever gave an SLI diagnosis, even though the children met the criteria for SLI. The change happened when the label changed, but I don't know why I was more reluctant to give a diagnosis in those days.*

In particular, participants focused on the fact that SLI criteria stipulated that there must be a measured discrepancy between non-verbal IQ and language scores on a standardised assessment, in order to ensure that difficulties were "specific" to the domain of language. One outcome of CATALISE was the removal of this from DLD criteria, which was considered by many participants to increase the parity for children accessing services. It was perceived that the SLI criteria had restricted access to support for some children, and DLD was generally considered fairer, given that children with lower non-verbal IQ scores could benefit from intervention:

> *Patricia: Since the DLD terminology I think we're fairer to more kids now, having got rid of the cognition. I think there was an awful lot who fell through the cracks that would've got "language in line with learning", their cognition is really low - but that's why their language is really low! They wouldn't get the SLI diagnosis.*

> *Jackie: DLD widened the remit and the children who can access the service. It was very narrow, wasn't it, before.*

For some participants, the widening of criteria had also been useful for the process of diagnosis. Elle had previously found identifying the specific aspects of the diagnosis to be challenging, whereas the DLD term enabled quicker diagnosis if language needs were identified:

> *Elle: We spent a lot of time thinking are they SLI or are they something else? Are they semantic-pragmatic? It just makes it a whole lot easier to say they're all DLD rather*

> *than spending time differentiating. It's made it clearer for writing reports as well, because it's a very clear label for a much bigger group of children.*

Although most participants concurred that a broader group of children were able to access provision, the removal of the discrepancy criterion also caused difficulties in practice, as will be discussed in the next organising theme, OT 2: *Challenges of DLD.*

### 6.1.2 OT 2: Challenges of DLD (The Introduction of DLD)

This organising theme (OT 2) contains three BTs that account for the challenges described in relation to the introduction of DLD. Although participants were generally positive about the introduction of DLD, there were several who discussed difficulties incorporating it into practice. The interpretation of diagnostic criteria for DLD was widely discussed, and Basic Theme 4 “Criteria Uncertainty” accounts for the difficulties described by participants in understanding and applying recommendations from the CATALISE project. Basic Theme 5 "System Barriers" discusses challenges pertaining to systems that participants practised within, including established pathways and liaison with external services. Additionally, participants encountered problems operationalising diagnostic criteria into practice, which is covered in Basic Theme 6 "Implementation Barriers".

#### *6.1.2.1 BT 4: Criteria Uncertainty (Challenges of DLD; The Introduction of DLD)*

This basic theme discusses the confusion and diversity in opinion amongst participants regarding the clarity of the diagnostic criteria produced by the CATALISE project. Many struggled to interpret the recommendations for diagnosing DLD, and some used the interview as an opportunity to ask questions about their interpretations, especially when inconsistencies were observed across literature sources. A statement provided by the charity *ICAN*, which appeared to contradict CATALISE guidelines, caused Danielle to question her understanding of the criteria:

> *Danielle: I know one child who doesn’t have receptive language difficulties on formal assessment, but has very significant expressive language disorder and verbal*

> *dyspraxia. I said, yes, this is DLD, and then the ICAN leaflet that said children with DLD have receptive language difficulty and it threw me.*

The criterion that induced the most divergent views amongst participants was the age at which DLD could be diagnosed. The CATALISE criteria recommend that DLD can be applied under the age of 5 if there is clear evidence of a persistent need (Bishop et al., 2017), whilst the RCSLT briefing paper includes "language difficulties in under-5s with few risk factors" as a separate category (RCSLT, 2017c). Several participants had been advised that DLD could not be diagnosed until a child was aged 5, and others were unclear about the guideline:

> *Rebecca: Age five is the only time that we're allowed to officially diagnose DLD.*
>
> *Amanda: They don't give the DLD diagnosis for pre-schoolers, but there is a question mark about that.*

Some participants recognised that services often developed independent strategies in response to unclear guidelines as a means to direct clients to existing intervention pathways. Izzy, who worked with preschool children, was one of several participants who had observed divergence across services about the age at which to diagnose DLD. She had been instructed by a manager in one service to diagnose all language difficulties as DLD, but when she moved to a different service with a different pathway, had been advised that there had to be a 6 month waiting period before making a diagnosis. This required an adaptation to terminology based on service protocol:

> *Izzy: We would diagnose DLD straightway if a child had language difficulties […] But a phrase I might use now would be something like "language difficulties which are persisting despite intervention" to show that some intervention has been tried and has not been successful so therefore they're going to need the specialist support.*

Participants who were regularly working with preschool children generally talked about avoiding the term DLD when it was suspected below the age of 5. Some had observed the terms "language delay" and "language disorder" used by other SLTs on reports for very young children, which had previously been commonly applied in the UK to direct intervention. Participants acknowledged that this was no longer recommended practice, and were concerned about the inconsistency across services. Many felt that further support was needed to develop a profession-wide understanding of the criteria for use in practice.

> *Amanda: I would just love there to be a tick box or some information that says they need this, this and this, and you can then say "It's really clear they've got X, Y and Z, and that's why I'm diagnosing it"*

Whilst uncertainty in the criteria caused reluctance to use DLD, participants were generally keen to have queries resolved and gain a more confident understanding, often motivated by the perceived benefits of achieving terminological consistency.

#### *6.1.2.2 BT 5: System Barriers (Challenges of DLD; The Introduction of DLD)*

In addition to the difficulties encountered with interpreting DLD criteria, participants described some key system barriers that made diagnosing DLD challenging. One of the main challenges raised was differentiating diagnoses in practice, particularly between DLD and other learning difficulties, partly due to the removal (from SLI criteria) of a measured discrepancy between nonverbal-IQ and language scores. Participants had observed that IQ testing was deemed unnecessary in the diagnosis, but were unsure about ruling out severe learning difficulties without measuring IQ:

> *Danielle: On Dorothy Bishop's webinar she said we don't need to do IQ testing. But from my understanding - you can have mild or moderate learning difficulties and have developmental language disorder, but not severe learning difficulties.*

Some challenges related to how external services were able to work with elements of the diagnostic process and criteria for DLD, which impacted how participants were able to conduct diagnosis. The withdrawal of the discrepancy criterion had caused uncertainty regarding a continued need for IQ assessments. Access to educational psychologists ("ed psychs") had depleted since the change, however, Jackie reported that IQ scores were often required for children to access educational provision. Kitty reflected on the consequential change in her role and the additional challenges associated with working as a lone professional in diagnosis:

> *Jackie: Now that they've got the new diagnosis of DLD they were saying do we need ed psych assessments? The panel admissions team are still saying we definitely need an ed psych report so children are still being rejected from that panel because they haven't got any information around their non-verbal IQ.*
>
> *Kitty: It was easier before. An educational psychologist would do an assessment. We wouldn't give the diagnosis, we would just go, right, they need therapy. Whereas, now… sounds awful doesn't it, but because the only person that's going to give that diagnosis is us, we have had to think harder about it.*

The diagnostic recommendations produced by the CATALISE project also shift the focus from quantitative assessment scores, used for SLI, to assessment of the functional impact of language difficulties for the child. Participants felt that the lack of quantitative scoring reduced certainty that they had the right diagnosis. Comparatively, functional assessments, which often relied on clinical judgement, were considered vulnerable to being challenged in an EHCP:

> *Nicole: I feel uncomfortable putting DLD into their reports because I could have interpreted this wrong. From my experience, I don't think [my judgement] would stand up in a court of law.*

Part of the issue was the lack of communication with wider professionals about the change. The use of functional criteria was particularly problematic as it was not widely used or accepted by non-SLT professionals and funding bodies:

> *Amanda: In our borough, it's down to the scores, the evidence, the numbers. I think it's quite difficult to quantify it, and if you were writing that in a report for an EHCP before it went to tribunal you need the evidence and you need to be able to understand why you've made that decision - and it is the right decision.*

Service criteria and funding were generally perceived as an inequitable barrier for clients, for which participants were motivated to find solutions. However, it was widely considered that the current guidelines for diagnosing DLD did not provide support for such clinically rooted issues.

#### 6.1.2.3 BT 6: Implementation Barriers (Challenges of DLD; The Introduction of DLD)

This basic theme covers the problems that participants discussed in relation to the practical implementation of DLD criteria. One criterion is that language needs are likely to be persistent. Several participants worked only with younger children, and commented on the challenges identifying which clients might continue to have long term difficulties, given the lack of experience working with children into adolescence:

> *Danielle: Can I really say that this child will have language disorder long-term? If I'm saying it's DLD, it is a long-term condition, and people are asking, "well, what will that look like when they're a grown-up, a teenager, an adult?" And I don't have the experience because I don't see people at that stage.*

As the criteria state that it is a lifelong diagnosis, participants were keen to diagnose DLD with certainty. However, most encountered limitations such as insufficient time to conduct full assessments and observe the impact of intervention:

> *Amanda: Part of DLD is that they respond to intervention and we felt like we couldn't diagnose it in a short space of time. If you just see a child for an assessment it's difficult to diagnose DLD because you need to then work with them to see the intervention to then diagnose it, and that's not always practical.*

Many SLTs felt that the detail was insufficient to interpret and apply in practice, particularly as clients present with a high degree of heterogeneity and often meet criteria for different diagnoses. A particular difficulty with implementing the criteria was distinguishing between autism and DLD:

> *Patricia: Kids that come in are really DLD but as time goes on they might get an autism diagnosis that you wouldn't have picked up. If you look at the checklist for receptive language disorder, there's an awful lot of things that could get misdiagnosed for autism.*

This was recognised to be particularly challenging due to the lack of clarity in diagnostic boundaries. Several participants felt that the needs of their clients did not map directly onto criteria, and were not confident to give a lifelong diagnosis that may need to be changed. Often this was particularly problematic when clients had severe or multiple needs. Elle worked in a language unit and explained that, in order to access the specialist support, children were required to have severe needs and a DLD diagnosis. However, severe needs typically overlapped with other diagnoses:

> *Elle: To access us they need the diagnosis but the children change and develop. When they were little you think "yes they might be on the spectrum". And as they get older you realise that no, it was just lots and lots of language difficulties.*

In contrast, some participants were unsure of how to diagnose clients whose needs were not sufficiently severe to meet service criteria for intervention. Danielle had observed numerous clients with milder needs that did not qualify for service provision and so would not receive the diagnosis:

> *Danielle: We just see the ones that are definitely in the DLD camp. The borderline cases, those that might be on the edge of the seventh or eighth centile or whatever, I worry about those, because there's plenty of those.*

There was a recognised need for a consistent strategy or term for clients with milder language difficulties if they were unable to access provision so that they might still attain the benefits associated with having a widely recognised term.

### 6.1.3 OT 3: Needs of the SLT (The Introduction of DLD)

This organising theme covers the resources that participants felt they needed to support their diagnostic practice in relation to DLD. Despite the difficulties that participants experienced with the diagnosis of DLD, many were motivated to use the term in their practice. Basic Theme 7 "Support Adapting to Change" accounts for the needs of SLTs in making changes to elements of their regular practice around the time that the criteria were introduced. Following the publication of CATALISE recommendations, there was a perceived need for cohesion in the way that the profession responded, as many received divergent guidance from services for implementing the diagnosis in practice. This need is discussed in Basic Theme 8: "A Cohesive Professional Strategy". Basic Theme 9 "Training, Networking and Supervision" discusses the types of guidance that participants felt were needed from the professional body.

#### *6.1.3.1 BT 7: Support Adapting to Change (Needs of the SLT; The Introduction of DLD)*

This basic theme accounts for the challenge of modifying diagnostic practice from SLI-related procedures and introducing DLD into practice. Several participants described a period of confusion as changes took place. It took time for services to provide guidance about how they were responding to the publication of CATALISE, and participants recalled being unsure of which diagnostic term to use during the transitional period. The distinction between delay and disorder had been useful for service planning and maintained by some SLTs:

> *Izzy: Some therapists are still using language delay and language disorder in the same way as they'd always done in the past. I remember some people in the office saying, "oh no I won't be using DLD", some of the older therapists. But over time people definitely came round to it and realised the importance.*

SLTs who were accustomed to practising with SLI criteria found it challenging to change their practice to the CATALISE recommendations. Experience in diagnosing clients was not perceived to hold benefits without the provision of training to update practice. Kitty explained that for SLTs in practice during the change, implementing new recommendations was difficult because they were not able to access the information that student SLTs were receiving at university:

> *Kitty: The newer ones, because they've come in when all the CATALISE stuff was going on, I think they are more aware of DLD. Whereas more experienced therapists have always gone on SLI. It's hard to change.*

However, all interviewees who had been students when the CATALISE project was published considered the guidance from universities to be insufficient, as will be discussed in Basic Theme 12: "University Training" (BT 12; OT 4; GT 2). Patricia likened the problems caused by a change in diagnostic recommendations to a change she had experienced in relation to the diagnosis of "verbal dyspraxia". The introduction of a change resulted in a reduction in confidence, for fear of making a wrong diagnosis:

> *Patricia: I remember after the Dodd recommendations came out, we were terrified to diagnose "dyspraxia". There was no other guidance.*

The difficulty of changing practice meant that some SLTs were reluctant to use diagnoses when changes were employed, despite recognising the benefits. Many participants were keen to access training to support their use of DLD.

#### 6.1.3.2 BT 8: A Cohesive Professional Strategy (Needs of the SLT; The Introduction of DLD)

Following the publication of CATALISE, participants were frustrated by the lack of guidance and supportive clinical material from RCSLT. Most were aware of the changes, but unclear whether to implement them in practice and if so, when and how. Melissa, a student at the time, described the widespread confusion that extended across the profession, and the unclear instruction from lecturers and placement educators:

> *Melissa: I was in the middle of my degree when it changed so they had a bit of an emergency module to go through it. […] The lecturers weren't sure what the criteria was (sic). They had to combine information from RCSLT and ASHA. At that point, we were confused about the differences between SLI and DLD, even the lecturers. We went to placement and were telling our educators what we knew, but they weren't informed. It was hard to put into practice.*

Several participants felt that their practice had been encumbered by the slow response from RCSLT and universities to the publication of CATALISE. Many commented that the guidance available for diagnosing DLD was insufficient for their needs, causing concern that SLTs were left to interpret criteria independently and resulting in inconsistent practice across the profession:

> *Amanda: It's a useful diagnosis, but not as useful as it could be because it's not being used. It depends on who's running your service and who you've accessed supervision from. You go on a course and you're like "oh, actually, I could do it a different way". I want it to be a clear cut yes/no kind of option.*

Some participants felt that there was an ongoing need for support around diagnosis to improve confidence and provide clarity around criteria. Nicole disclosed feeling inadequately supported and considered that her practice was unregulated, particularly with regard to the introduction of DLD:

> *Nicole: I still find the whole situation really confusing. And I would like clarification. I could write whatever I want in an EHCP and no-one would bat an eyelid. I could say this child had eight legs and they'd be like "ah right okay". RCSLT has released some guidance, but my service works very differently to lots of other services.*

Some interviewees had unanswered queries about the criteria and wanted specific information about diagnostic processes to support their use of the term. Often when participants discussed problems with the diagnostic criteria of DLD, they expressed interest in what other SLTs were doing and how guidance from CATALISE had been interpreted by others:

> *Amanda: I don't know if there's a cohort of us that are struggling or if it's across the board. I feel like it's very much you get stuck in a bubble of where you work and therapists you know. But maybe up north they're doing an amazing job and it would be really good to share some of that practice, and if someone's really confident then actually it would be good to see that in action so we can model it.*

Participants wanted guidelines designed for practical application which could support consistent practice. Having set guidance from an overarching source such as RCSLT was considered essential to ensure that SLTs were being consistent across the UK. Grace considered that the focus of RCSLT was misaligned with the needs of clinicians around the time of the change:

> *Grace: The chances of what Dorothy Bishop said trickling down to your average SLT are virtually zero. What are the Royal College doing? The Royal College's remit seems to be to promote the Royal College as opposed to do anything to help clinicians. If you flick through Bulletin, they're very busy doing things like going to the House of Commons and lots of PR stunts.*

There was an overall sense of frustration that SLTs had been left to interpret the recommendations of CATALISE and it was felt that channels of communication had not been utilised to support implementation, leading to inconsistent practice.

#### *6.1.3.3 BT 9: Training, Networking and Support (Needs of the SLT; The Introduction of DLD)*

Participants talked about the value of training opportunities and practice development in multiple forms, including preregistration training, Continuing Professional Development (CPD), supervision, and collaboration with other SLTs. However, it was raised across interviews that training was rarely available for making diagnoses. Participants who had accessed training, generally wanted more targeted guidance on the diagnostic process in terms of understanding and implementing DLD criteria:

> *Sheryllin: There's rarely any training around making a diagnosis. The CPD we get is around interventions - other than making a diagnosis of something like autism spectrum disorder, where there is much more structured training.*
>
> *Amanda: We've had quite a lot of training on it and I came away like "yeah, this is what we need to do", but also thinking I'm not sure I feel confident enough to say yes, they have a diagnosis.*

Whilst formal training opportunities were perceived to be unavailable, discussing the diagnostic process informally with other SLTs was a supportive factor. Participants particularly valued structured opportunities, such as supervision and CEN meetings. Generally, participants who were more confident about diagnosing DLD spoke about being part of supportive teams or had received specific guidance from the service they worked in. Caitlin attributed her confidence to working closely with DLD specialists and discussing queries and challenges:

> *Caitlin: I feel like the criteria is quite clear but I'm not sure if that's just because I'm in the language unit. […] Having the team to talk with really helps. If I was working in isolation and didn't have a team to go back to I might feel a bit more unsure.*

It appeared that those with least certainty were in positions of professional responsibility for advising other SLTs about the diagnosis, or were the lead within services. Nicole, who was working as the only SLT in a school, expressed hesitance in the absence of support from other professionals:

> *Nicole: I'm not part of a huge team, I am the most senior person. I have a clinical supervisor, but that isn't an SLT- they're a deputy headteacher - so I feel uncomfortable writing DLD because I wonder if it will be disputed.*

Not all participants were able to access support and supervision and some noted that it was difficult to travel to training locations, as many opportunities were based near London. Many considered that the provision of more training and networking opportunities would be beneficial to their diagnostic confidence and skills.

### 6.1.4 Summary of Global Theme 1: The Introduction of DLD

This global theme has been constructed to portray the views of interviewees with regard to the recommended changes to practice incurred by the CATALISE project. The claim of this theme was that the introduction of DLD was a significant change for SLTs in the UK, illuminating challenges in relation to their terminology use. Through the exploration of the issues that comprise GT 1, tensions have been recognised between the intentions of CATALISE recommendations in striving to achieve terminological consistency, update criteria and facilitate successful implementation. Generally, participants were highly supportive of DLD due to the potential for achieving consistency, increasing public awareness of language disorders, and the improvement on the previous term, SLI. However, participants also encountered significant barriers, including uncertainty relating to the new criteria which, alongside adapting to changes, contributed to low confidence in using the term. Low confidence to use the term was a recurrent theme across interviews, resulting in a reluctance to make the diagnosis, despite a desire to use the term. The associated problems indicate potential flaws in achieving terminological consistency. Participants felt unsupported by the professional body and there was a perceived need for increased support for SLTs to implement the diagnosis in practice. Suggested areas for improvement included the availability of training and clinical guidance for diagnostic practice that takes into account the issues involved with clinical implementation, in order that recommended processes can be universally understood and applied across the profession.

## 6.2 Global Theme 2: My Practice

This global theme represents the accounts offered by participants about how they conducted diagnosis in their practice and the issues that shaped their approach. Compared to the other global themes, GT 2 (My Practice) has a stronger focus on how participants portrayed issues that related to their individual clinical circumstances. GT 2 makes the claim that each SLT develops their own approach to diagnosis, depending on factors such as previous clinical experience, demands of the workplace, the nature of their caseload, and personal views on diagnosis as a concept. Generally, participants expressed low levels of confidence in their own diagnostic practice and Organising Theme 4 *Confidence to Diagnose,* incorporates the issues which contributed to this. Participants spoke in detail about the importance of meeting the needs of the families they worked with, and Organising Theme 5 *Needs of The Family* explores how participants worked dynamically with individuals, making adaptations to their approach in response to their unique circumstances. The way that participants approached the delivery of diagnoses to their clients is then presented in Organising Theme 6 *Giving the Diagnosis to Clients.* Figure 6-2 displays the relationship between the basic and organising themes that make up Global Theme 2:

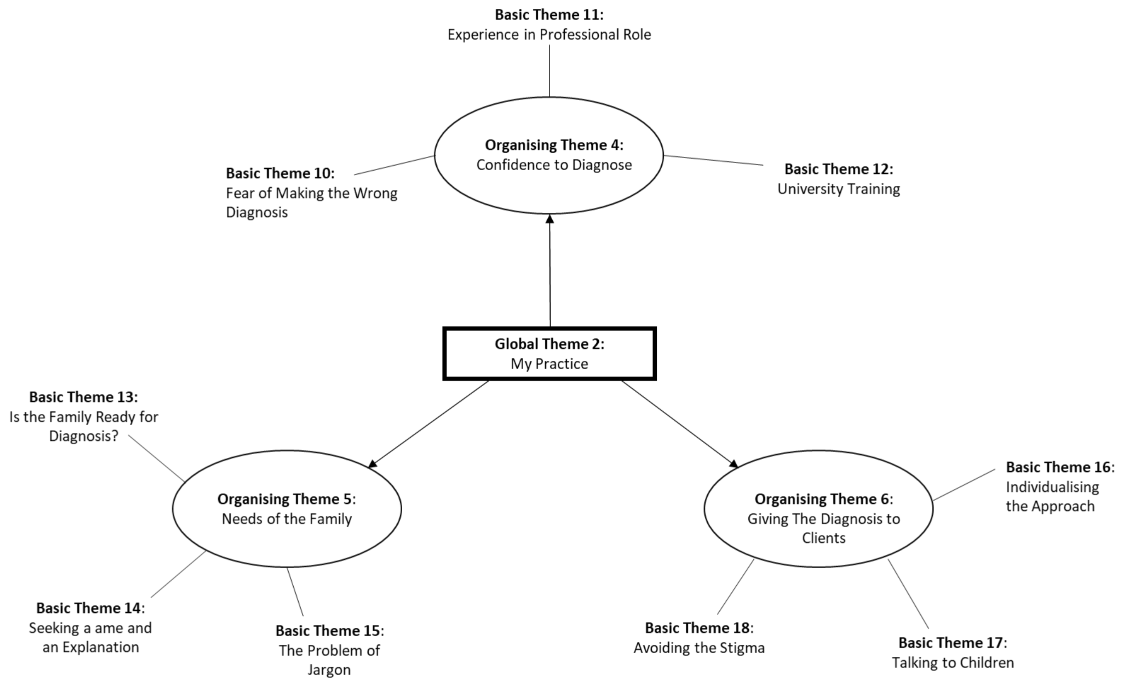


*Figure 6-2 Thematic Network for Global Theme 2: My Practice*

### 6.2.1 OT 4: Confidence to Diagnose (My Practice)

This organising theme, ***Confidence to Diagnose,*** pertains to ideas about how comfortable participants were about making diagnoses in practice. Despite being confident in other areas of practice, low confidence about making diagnoses was a common theme, resulting in participants often taking a tentative approach with terminology and diagnosis. As summarised in Basic Theme 10: "Fear of Making the Wrong Diagnosis", participants were concerned about the consequences of giving a diagnosis that could be challenged by colleagues or might need to be changed. Many discussed the lack of clinical guidelines to provide support for their diagnostic process and instead used their experience and expertise to gain a sense of confidence, as covered in Basic Theme 11: "Experience in Professional Role". Participants who were newly qualified did not have the same level of experience to rely on - and therefore experienced lower confidence. As covered in Basic Theme 12: "University Training", participants described initially feeling unprepared to make diagnoses and discussed limitations in their training. Although these issues were experienced differently by each participant, some common themes could be identified.

#### *6.2.1.1 BT 10: Fear of Making the Wrong Diagnosis (Confidence to Diagnose; My Practice)*

There was a great sense of responsibility across participants in making diagnoses, and many feared the consequences of ascribing an incorrect diagnosis. It was generally considered that it was better to withhold a diagnosis than to give one that might need to be changed. It was reported that clients' presentation of needs were highly dynamic over time, and many did not consistently fit the criteria for one diagnosis. Several participants discussed fear of giving a diagnosis that might need to be changed or revoked in future, particularly when the receipt of diagnosis was emotionally charged for parents. To avoid this, many participants reported that they would describe the needs of the child instead of using specific terms. A description was perceived as "safer", and less open to being queried or challenged by parents and professionals.

> *Elle: That's the reluctance - if you say for definite, you're going to be held accountable in four or five years' time: “Well, the speech therapist said this is what it is”.*

> *Patricia: We're safer to describe rather than diagnose until we've got more information.*

Participants were aware of being challenged by other professionals working with their clients about the diagnoses they made. Some discussed an element of risk involved in making a diagnosis, particularly for legal documents such as Education Health Care Plans (EHCPs):

> *Jackie: I’m scared to diagnose at the moment because I'm thinking “What if I'm wrong? What if it isn’t?” And then that’s written down. Applying for an EHCP - having that go through - and what if I’m wrong?*

The ability to produce evidence for a diagnosis was considered important, particularly if it was challenged. Assessments were considered useful in providing scores that could support a diagnosis, thereby increasing confidence:

> *Heidi: I would only feel confident using specific labels if I could back it up with evidence. And if someone challenges and says, “Why have you done this?” - It’s clear in the report, I’m saying inconsistent phonological disorder because I’ve done a consistency assessment.*

Although participants ranged in their level of confidence, most described occasions of uncertainty regarding the extent that clients met the criteria. The perception of the level of risk involved in making a diagnosis contributed to some being less inclined to give a diagnosis, with a general preference for description.

#### 6.2.1.2 BT 11: Experience in Professional Role (Confidence to Diagnose; My Practice)

This basic theme explores how participants relied on their experience as an SLT as a guide for making diagnoses, and this was generally recognised to be a source of confidence. Clinical skills were generally perceived as more important than awareness of theory; participants considered that having a theoretical background (in the absence of experiential knowledge) was usually insufficient to feel confident in making diagnoses. The heterogeneity of clients was thought to contribute to this, as it was challenging to identify diagnostic features in clients:

> *Elle: You've got the theory, the understanding […] and then you end up with children in real life which aren't textbook children in any way.*

When talking about confidence to diagnose, participants often referred to how much experience they had in specific clinical areas. Experience of working with previous clients could be used to make comparisons and predictions about progression over time. Through the acquisition of specialist knowledge, Heidi had become more confident to use more specific diagnoses:

> *Heidi: Newly qualified therapists would never diagnose apraxia - that wouldn't be something they were confident in - but because I was a specialist in speech disorders, that was something that I did feel confident doing.*

Experience in practice was deemed an essential component of confidence. Izzy stated that she would not make diagnoses at all in the first year after qualifying as an SLT:

> *Izzy: A year ago I might have said, no, I would never do it. I think it's related to my confidence and feeling secure in my knowledge. It's three years since qualifying - the first year and a half, two years are tricky navigating everything.*
>
> *Caitlin: I left uni and it was like "oh my god what am I doing?" […] Diagnosis comes with the job and generally seeing the children. You only get so much from reading about it. Once you start working and you see a range of diagnoses, it starts to make sense.*

Having supervised newly qualified practitioners (NQPs), Kitty had observed that SLTs with less experience were more hesitant to make diagnoses due to low confidence rather than lack of knowledge:

> *Kitty: I think the more newly qualified are thinking it, but don't want to give the diagnosis […] I think it's about confidence. I think they do know and they are right but they just wait.*

Although low confidence was reported across the sample, generally the limitations associated with theory meant that SLTs with less practical experience were therefore relatively more hesitant to make diagnoses in their practice.

#### *6.2.1.3 BT 12: University Training (Confidence to Diagnose; My Practice)*

As identified, clinical experience was generally perceived to be more important for confident diagnostic practice than theoretical knowledge. Participants discussed their initial training and the extent to which they felt this had prepared them for diagnostic practice. This was important to NQPs, and they reported that feeling confident in practice was largely dependent on the provision of university content. Most considered the skills training in making diagnoses to have been insufficient, with teaching focused on theoretical aspects. Nicole recalled key parts of the diagnostic process that she did not feel prepared for when she first qualified:

> *Nicole: I don't think there was enough guidance - I could describe the features of things very well, but in terms of how to diagnose using assessment criteria - no. And in terms of whose responsibility it is - no. Particularly not in paediatric areas.*

Participants were also critical of teaching in relation to selecting assessment tools, and several had to learn this independently whilst in practice:

> *Melissa: I didn't realise there were so many different types [of assessment tools], they didn't cover them in uni and I'm only learning about it in practice. It's quite hard to distinguish between them.*

SLTs who had been in practice longer talked less or not at all about their initial training regarding confidence. However, it was observed that there might be a disparity in clinical skills and approaches based on which university they had attended and the specific expertise of lecturing staff:

> *Patricia: Reading University, oh flipping heck, you'd know your syntax. Because they had David Crystal as one of their lecturers. I trained in Edinburgh, it was Metaphon - that was the research that came out of Edinburgh. And Sheffield is all Stackhouse and Wells.*

Participants that had been at university during the time that CATALISE was published felt particularly disadvantaged, as teaching was tentative regarding the use of SLI or DLD criteria, and they also did not have skills or knowledge gained from the experience of working with children. Melissa recalled lecturers being unsure about the new criteria, and teaching being unclear. She felt that this had impacted her confidence to diagnose once she had qualified, as she had not been able to implement skills on placement.

> *Melissa: We graduated and none of us had experience of the DLD profile, even though we had theoretical knowledge. Not a lot of support really.*

As a result, many NQPs discussed relying on extra support from senior colleagues. Although most perceived that university training did not inform their diagnostic approach, this was largely attributed to the lack of content. This was considered to contribute to feelings of low confidence after qualification, which generally increased hesitance to make diagnoses.

### 6.2.2 OT 5: Needs of the Family (My Practice)

This organising theme, *Needs of the Family,* is about the families that SLTs work with, and how participants incorporated their needs into their diagnostic practice. Family circumstances were broadly considered to be an essential factor in how the diagnosis was delivered, mostly in conversations that took place with parents. Many found that the needs of families on their caseload varied widely, and the process of judging what level of diagnostic information was appropriate for each family is explored in Basic Theme 13: “Is the Family Ready for Diagnosis?” Some families were keen to receive a diagnosis and participants recognised that some were seeking a way to explain the difficulties that they observed in their child, as explored in Basic Theme 14: “Seeking a Name and an Explanation”. Participants recognised that families ranged in their understanding of technical terms and concepts, and would modify their use of terms to account for this, as discussed in Basic Theme 15: “The Problem of Jargon”. The main issues concerning the needs of families that form the basic themes were managed differently by participants depending on their views, previous experiences, and the nature of their practice.

###### 6.2.2.1 BT 13: Is the Family Ready for Diagnosis? (Needs of the Family; My Practice)

This basic theme explores the process of sharing a diagnosis with families. Participants were acutely aware that, for some families, receiving a diagnosis was a significant life event. Making a judgement about parents' feelings about receiving it was important in guiding their approach. Some had experienced working with parents who were fearful of diagnosis, particularly accepting that their child had difficulties:

> *Patricia: The resistance we see is often parents struggling to accept it. You know, nobody wants their child to be different or to be set up to struggle in life.*
>
> *James: I think when families really don't want a diagnosis, maybe that's a cultural reason. Maybe they just don't want to accept that their child has those needs.*

Some SLTs recognised social or cultural differences in how a diagnosis was perceived by families, and being culturally sensitive was important. Some described the diagnostic process as a "journey", which involved the SLT making a judgement of the family's needs, and modifying their approach in accordance.

> *Izzy: I've had religious parents who have said things like, "it's okay, God's looking after him". Or parents from cultures where it's seen as a negative thing to have a child with additional needs so they've not been very open […] with those families it's a journey to get to the stage where you talk about diagnosis.*

Several participants talked about not sharing their diagnosis with families if it was deemed to be a difficult piece of information for the family to receive. Caitlin described being "more mindful" in her approach with families who were struggling more with the diagnosis, and would instead describe the difficulties that the child was having.

> *Caitlin: There's a couple of parents that it's a bit more tricky with because of how they're coping with the diagnosis and receiving it. So I'd be more, not "fluffy", but I guess a bit more mindful in my approach.*

Certain terms were considered more problematic, and this was a factor that played into the delivery of diagnosis. Some participants were particularly hesitant to use the word "disorder" in diagnosis due to the parental concern it may cause.  Dylan suggested that the term might be associated with inferiority or intellectual disability:

> *Dylan: The way I use terminology depends on who I'm talking to. To parents, I probably wouldn't say DLD. The word disorder is quite a medical term, and it can have a very negative connotation. If a parent is told that their child has a disorder, it can cause all sorts of worries or ideas that "my child is inferior", or "my child has got… I don't know, an intellectual disability".*

Some participants used alternative terms to avoid "disorder", preferring descriptive terms such as "mild difficulty".  Alternative terms were also used to avoid giving a specific diagnosis if SLTs perceived that families were not ready for that information.  Identifying the right way and time to introduce the diagnosis to parents was perceived as an important clinical decision that formed part of the diagnostic process.

#### 6.2.2.2 BT 14: Seeking a Name and an Explanation (Needs of the Family; My Practice)

This basic theme was generated from participants discussing the idea that, for many families, attaining a diagnosis was important, as it explained the difficulties that they had observed in their child.  Some participants talked about their experiences with parents who would be immediately expectant that their child would receive a diagnosis as part of the clinical interaction.  For some, managing the expectations of parents who were curious about the diagnosis in early appointments was an important element of practice:

> *Rebecca: You do get parents who say, "well, what is it then?", in the first appointment when you're still exploring things and then I would tentatively say, "it's feeling a bit like disordered language".*
>
> *Harriet: You get pressure from parents wanting diagnoses and that can be hard sometimes if you're not sure.*

Some participants viewed parents seeking diagnosis as a positive sign of engagement. Heidi recognised that parents could attain a sense of empowerment in the diagnostic process:

> *Heidi: The locus of control - if parents have that information and understand it, feel more empowered. For seeking information, so they can find out what the future might look like, they want a specific term.*

However, some found it challenging when parents were accessing external sources of information, as the content was not always helpful or correct, particularly on social media. Not all participants considered that seeking diagnoses was positive, especially when it was motivated by gaining access to support. Elle described a mounting perception amongst parents that there was a need to "fight" clinicians in order to access a diagnosis and provision for their child:

> *Elle: I think some parents do need to have a label, and I think it is fair. But I've been very reluctant to diagnose "verbal dyspraxia" because it's a minefield online […] it can be quite negative and you have no control over what parents latch on to. Parents say "Someone I follow on Facebook got loads for their child but they've had to fight for them". When parents have to fight for everything their child needs, they can feel like there's some sort of NHS conspiracy.*

It was also recognised that access to support was not necessarily the primary driver for attaining a diagnosis for some families. Grace and Danielle had observed that some parents wanted a diagnosis as a way to explain their child's difficulties to others:

> *Grace: People are seduced and flattered by labels. You'll often say to parents, "Well, a label won't necessarily help" And they'll come back with "Yes, but I'd just like to know what it is so I can tell other people".*
>
> *Danielle: Most people want to be able to say to somebody "my child has this, and that's why they're like that" - they want to name it.*

Some participants empathised with this view and talked about how receiving diagnoses in their personal lives had increased their awareness of the needs of families. Some explained that they were more inclined to share diagnoses when they recognised the needs of families in their own experiences. For example, Jackie's experience of frustration in attaining a diagnosis of dyslexia for her daughter had caused her to reflect on her own diagnostic practice:

> *Jackie: "Is she dyslexic?" [My daughter] was like "I just want to know now. I don't care if I am and I don't care if I'm not but I want to know". And then you think about*

> *the kids you work with and I thought "oh yeah okay - you need to know". They all need to know.*

In addition to wanting an answer, some participants observed that a diagnosis could help parents to understand their child's difficulties, as it provided an explanation. Some had observed a sense of relief from parents when they received a diagnosis, which drove them to provide parents with a diagnostic term:

> *Patricia: For him, it was just such a relief to go you're not stupid actually, there is something that we have seen that is impacting on your ability.*
>
> *Nicole: They're very relieved to have a to have something to be able to say "my child's not naughty, my child does have an issue or need"*

Participants' experiences and the ranging needs of families were both highly important factors in informing their diagnostic approach. This therefore highlights a potential area of variation in practice across the profession.

#### 6.2.2.3 BT 15: The Problem of Jargon (Needs of the Family; My Practice)

A key component of diagnostic practice was communicating effectively with families regarding the needs of their child. This basic theme describes the impact of families' understanding of diagnostic concepts on SLTs' diagnostic approach. Professional terminology was perceived by many participants to be "jargon", and not recognised by most families, and the idea of families not knowing a term was considered problematic. Participants were keen to avoid using technical terms – often describing them as inaccessible.

> *Laura: It also sounds very jargony. Phonological – do they know what that is? Do people know the difference between delay and disorder? I think there's a way of saying it in more simple terms that wouldn't be a detriment to them.*

Many felt it was unnecessary to share complex terminology with parents, and there were other terms that could be used instead. Several participants described using "parent-friendly" terms, which meant using words that were more embedded in the public lexicon such as “word finding difficulties” or “bumpy talking”:

> *Rebecca: I’d be quite conscious of using the terms they’re using, if children talk about bumpy talking, I will talk about bumpy talking.*
>
> *Izzy: I’m not going to blow a parent’s mind with a really complicated speech diagnosis […] You use what’s appropriate and necessary to make sure the child gets the care that they need.*
>
> *Elle: I'd say “speech sound specific difficulties affecting these vowels” but I wouldn't say “inconsistent phonological disorder” unless I was really desperate.*

The use of technical terminology was generally considered to depend on the family and the context. Several participants discussed only using technical diagnostic terms in reports, despite the fact that parents access clinical reports and contribute to EHCPs. However, having experience of a parent who had not understood a term in a report, Sandy highlighted that this approach could be problematic:

> *Sandy: In the reports professionals […] used the term “aspiration”. And it wasn’t until she died that the mum said, “I never really understood what aspiration was”. And I thought, “I think as professionals we do presume too much”.*
>
> *Harriet: If it was parents you use more parent-friendly terms but if it's a report that is going forward for an EHCP […] then you would be putting all your proper terminology.*
>
> *Sheryllin: When we’re writing our contribution towards plans, we will state “developmental language disorder” or “language delay associated with other conditions”. But that’s probably the only place where we actually use that terminology.*

Participants prioritised successfully communicating the needs of the child when sharing diagnostic information. Nicole emphasised that parental understanding of diagnostic terminology was compounded by low public awareness of those terms.

> *Nicole: Sometimes parents didn’t really understand because there was no label that they could go and research, or give them a leaflet about.*

Reflecting on her own experiences, Jessica questioned the avoidance of technical terms, concerned that it might restrict information seeking, and considered the potential benefits of providing an accessible explanation to accompany a diagnosis:

> *Jessica: It's an assumption that we shouldn't use jargon with parents. But if I went to the consultant and they diagnosed me with something and didn't give me the right label or described it in a fluffy way - would I then go "I'm not sure what it actually is?" So is it better to use the terms and not avoid jargon? It's more in the way that we explain those terms.*

However, this view was not expressed by other participants, and generally, it was recognised that the goal of a shared understanding required modification of terminology. The needs of parents were highly important, and translating diagnostic terminology was generally considered to be an essential part of the SLT's role.

### 6.2.3 OT 6 Giving the Diagnosis to Clients (My Practice)

As established in the previous organising theme, participants recognised the significance of the receipt of diagnosis for children and their families and were cognizant of this when considering their diagnostic approach. This organising theme describes the strategies that participants used to convey diagnostic information. Basic Theme 16: "Individualising the Approach" accounts for the adaptations that SLTs made in order to deal with the wide-ranging needs of clients. Whilst most of the focus was on giving diagnosis to parents, Basic Theme 17: "Talking to Children" represents instances where the question of involving children in the delivery of diagnosis was raised. The timing of sharing that information, particularly the age of the child, was considered an important factor in making this decision. There was a perception that diagnoses were associated with considerable negative connotations which, as explored in Basic Theme 18 "Avoiding the Stigma", contributed further challenges to giving the diagnosis.

#### *6.2.3.1 BT 16: Individualising the Approach (Giving the Diagnosis to Clients; My Practice)*

This basic theme is about how SLTs resolved dilemmas in sharing the diagnosis by modifying their approach and terminology, guided by individual circumstances. Although these were recognised to be wide-ranging, meeting the needs of each family was considered to be a high priority in the process:

> *Sophie: With diagnosis, there are a whole range of issues that need to be considered on a case-by-case basis with the client at the centre of it.*

Adapting the approach to each client often meant changing the terms used in sharing the diagnosis with the family. Jessica raised concern that this exacerbates the extent of terminological inconsistency, as unofficial terms are shared amongst communities:

> *Jessica: A therapist varies their terms, it's not that they are using terms differently - the meaning is the same - but whoever they use those different terms with is then going to use those terms with somebody else.*

The interpretation of a family's circumstances presented another reason for varying the diagnostic approach. Two participants reported varying terminology in accordance with parents' level of education and socioeconomic status:

> *Patricia: You might consider the socioeconomic status of parents, and are they aware of that kind of educational terminology.*

Using clinical judgement about the family's ability to understand the diagnosis was perceived to be a core aspect of the SLT's role. Jackie described the importance of avoiding assumptions, by asking parents about their prior knowledge and their needs:

> *Jackie: I ask "What do you know about it? You tell me what you know about it" and then go from there. Because you can get some really clued up parents and some not so clued up professionals.*

In addition to varying the terminology, some participants individualised the approach by introducing the diagnosis more gradually to some families on their caseload. SLTs employed different strategies in the delivery, in order to support families with the emotional impact of receiving a diagnosis. It was recognised that the receipt of information could cause distress and anxiety.

> *Charlotte: It's packaging information for parents in a way that they can cope with at a time in my judgement.*

> *Amanda: It depends on the parent. Some of them really worry and put a lot of anxiety on you. Other parents are just like "okay", or they don't really understand.*

All participants referenced the child and family being a high priority as part of their diagnostic approach, and adapting their delivery style to meet the needs of each client was considered an essential part of their practice - and an important skill for SLTs to have.

#### 6.2.3.2 BT 17: Talking to Children (Giving the Diagnosis to Clients; My Practice)

This basic theme covers how and when SLTs would talk to children about their diagnosis. The decision of whether to share a diagnosis with a child was presented by some as a moral dilemma. If the diagnosis was to be discussed with the child, most SLTs considered parents to be key agents in the decision and process. Some participants talked about mirroring the diagnostic terminology that was used by clients themselves:

> *Rebecca: I saw a child today, and she didn't mention stammering, stuttering, my speech difficulties, so I didn't either […] I didn't want to put words into her mouth by mentioning a specific term.*

> *Kitty: That is one area that I am not great at, telling a child what their diagnosis is. We talk about the things they find difficult, the things they find easy, the things that help, the strategies to put in place. But I don't often have that conversation with the children to say what their diagnosis is […] I discuss it with their parents.*

There was a perception that age was a key factor in whether children would understand or benefit from knowing their diagnosis. Several participants discussed the benefits of introducing diagnosis to older children, but there were differing views regarding age. Generally, there was a perception that self-awareness of difficulties or noticing differences from peers was a key factor, which many participants considered to occur in adolescence:

> *James: We diagnose young children, age 5, 6, 7, 8, you wouldn't necessarily want to be talking to them about their diagnosis at that point because their awareness of it is*

> *maybe not quite as high. But working with teenagers onwards, you want to start working on diagnosis to understand it.*

Some participants had observed the benefits of sharing a diagnosis with children, often because it fostered a better understanding. Some recognised that children were relieved to know their diagnosis, as it helped them to contextualise their difficulties and recognise that others face similar challenges. Jackie recalled a case where learning about diagnosis had remediated negative comparison with peers:

> *Jackie: I had a girl who was often in floods of tears saying "I can't read as well as everybody else I don't understand what the teacher's saying". And if you explain to them, "It's because you've got a few difficulties like we've all got difficulties in certain areas" […] If you explain this is why you're finding it hard, and why we're trying to help you, they're like "oh okay yeah I get it".*

> *James: It's very important to talk to them about their diagnosis and work with them so they have a good understanding of their differences and strengths.*

Some participants considered it to be important that children could use their diagnostic term to research their difficulties and connect with others, such as via the RADLD website:

> *Danielle: She was eight and she said she was pleased to know she has DLD - that explains things for her. She found helpful videos on the RADLD website and girls that have similar issues.*

SLTs who worked with older children recognised that diagnosis could be empowering and support them to communicate their needs independently. Amanda had observed that talking about diagnosis had been a helpful strategy for older children who had become fatigued with receiving speech and language therapy services. The diagnosis had helped in providing a rationale to the client:

> *Amanda: Quite often at college level we have to sit down with them and say "this is what you've got, this is what we're going to work on, how do you feel about that?" Because sometimes they begin to disengage, like "I've had speech therapists since I was 4, why do I need this still?" You need that terminology to support them to understand what they're going through.*

Generally, sharing diagnoses with children was perceived to be positive, although participants were highly reserved about doing so - unless there were clear benefits. Barriers included the technical nature of diagnostic terms, particularly for those who had language-related needs, and the concern that diagnosis itself is stigmatising. Each SLT approached this in nuanced ways, informed by their personal views about diagnosis and stigma, and the age of the children on their caseload.

#### *6.2.3.3 BT 18: Avoiding the Stigma (Giving the Diagnosis to Clients; My Practice)*

Some participants also considered that receiving a diagnosis could have a negative impact, and adapted their diagnostic practice with the aim of reducing stigmatising effects. Across several interviews, participants would refer to diagnoses as "labels" when talking about the more negative aspects. Many were concerned about the impact on the child, holding the perception that there was a stigma attached to having a diagnosis. Most of the focus was on the connotations of certain terms, rather than the implication of having a diagnosis. A few participants avoided using DLD, instead opting for "language difficulties", in order to reduce concern associated with the word "disorder":

> *Dylan: The word disorder - the most extreme are psychotic disorders, where people get very violent and aggressive and it can lead to murders and stuff. The word disorder conjures up all sorts of negative connotations.*
>
> *Caitlin: Using the word disorder with parents, I might be hesitant around using that word, not wanting to concern them.*

Other participants held the view that diagnostic terminology was overly medical for speech and language therapy, particularly due to the association between diagnosis and something being wrong or needing to be fixed. There was concern about the impact this might have on a child, particularly in drawing attention to aspects of life that children found difficult.

> *Grace: A label leads to a kind of circular argument, you can't do this because you've got that and you've got this so it means you can't do that.*
>
> *Patricia: It's controversial with…I don't want to be labelled and put into a box.*

Participants often expressed a need to vary the approach depending on the impact it was likely to have on each individual. Amanda described the decision to share a diagnosis as a "difficult balance" because children could react differently. She reported that some valued the explanation, whilst others experienced low self-esteem in association with having the focus drawn to their difficulties:

> *Amanda: I've known children that have said "now I know why I'm different", and that's been really important to them. But others are like "I've got this and I've got this and I've got this", and it lowers their self-esteem. It's a difficult balance.*

As reported in other basic themes, when SLTs were reluctant to use diagnoses, most described the characteristics that children presented with, generally opting for terms that they considered to be in alignment with a social model of disability, avoiding impairment-centric language.

### 6.2.4 Summary of Global Theme 2: My Practice

This GT represented the diagnostic approach of participants when working with clients, and how their practice was shaped. The claim was made that SLT's develop their own approach to diagnosis based on the nature of their practice and that they make modifications to their approach depending on the client. Participants' level of confidence, which was often associated with their level of experience, was found to impact their diagnostic practice. In determining diagnoses, many relied on previous clinical experiences of working with children and the theoretical knowledge they had acquired from university training. A dearth in either area was considered to be detrimental to confidence. Low confidence often resulted in the avoidance of specific terms, or reluctance to use diagnosis altogether. This was partly due to concern about a diagnosis being made that needed to be changed, which was considered to be emotionally difficult for families. This also heralds the idea that diagnostic categories do not align with the dynamic needs of paediatric clients, which will be explored in later themes. Participants' diagnostic approach was also often impacted by their views about how the age of the child, the needs of families, and their understanding of diagnostic concepts affected their receipt of diagnosis. Participants made decisions about how and when a diagnosis was shared with clients and had relatively high autonomy in this judgement. Decisions about terminology and timing were often influenced by their own views and experiences. Participants were sensitive to the significance of receiving a diagnosis and discussed a sense of responsibility for gauging their approach. Most avoided terms that were considered technical with parents of younger children, those who were perceived to have lower levels of understanding, and those with more negative attitudes towards diagnosis. Most reported that there was a need for variability within their own processes, given the differing circumstances of each child.

## 6.3 Global Theme 3: SLTs as Diagnosticians

This Global Theme shows how participants considered diagnosis within the professional role of the SLT. It makes the claim that SLTs feel conflicted about using diagnosis in practice, but that it is their role to make speech, language and fluency diagnoses. This is initially explored in OT 7 *Diagnostic Politics,* examining participants' views of the contribution that SLTs offer in the diagnostic process when working with colleagues outside of speech and language therapy. The overall benefits of diagnosis within speech and language therapy practice were questioned, as explored in OT 8, *Diagnosis in Speech and Language Therapy.* Participants were critical about the usefulness of diagnosis as part of their overall therapeutic process. There were mixed views about the appropriateness of diagnosis to denote the needs of their clients, and OT 9 *Practical, Theoretical, Social Challenges* explores the problems raised. Figure 6-3 shows the network of themes:

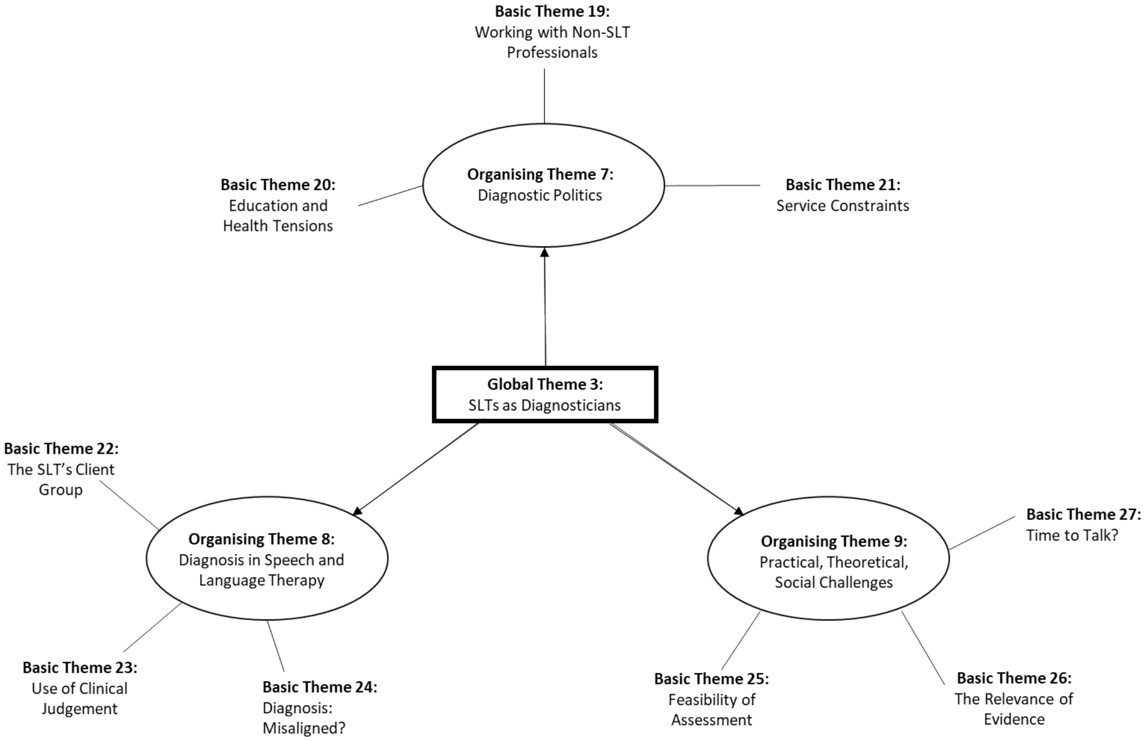


*Figure 6-3 Thematic Network for Global Theme 3: SLTs as Diagnosticians*

### 6.3.1 OT 7: Diagnostic Politics (SLTs as Diagnosticians)

This organising theme contains participants' views of their role in making speech, language and fluency diagnoses within their own practice and when working with external professionals and services. Interviewees' descriptions of their niche contribution to the diagnostic process as SLTs when working with others is explored in Basic Theme 19: "Working with Non-SLT Professionals". This role was often considered to be related to the setting in which participants worked, and as covered in Basic Theme 20: "Education and Health Tensions", several discussed the disjointed nature of the profession spanning education and health services. The influence of the workplace was particularly notable when analysing interviews with participants whose services were privately funded, and Basic Theme 21: "Service Constraints", examines the differences in practice compared to publically funded provision. When participants worked in public services, there was generally strict pathways and procedures to follow and limited capacity, whereas in private settings participants had relatively more autonomy over the incorporation of diagnosis into their practice.

#### *6.3.1.1 BT 19: Working with Non-SLT Professionals (Diagnostic Politics; SLTs as Diagnosticians)*

This basic theme is about the role in diagnosis that SLTs had when working and communicating with other professionals. Participants strongly expressed the view that only SLTs had the necessary and specialist knowledge and skills to make primary speech, language and fluency diagnoses, such as speech sound disorder (SSD) and DLD. As these fell uniquely within the remit of the SLT, the input of paediatricians and teachers was often considered inaccurate or inappropriate:

> *Rebecca: Communication is our thing, and it would be wrong for us not to have a role in the diagnosis.*
>
> *Patricia: Teachers, TAs will just kind of go "they've got it, haven't they?"*
>
> *And you're like, "And you're qualified to diagnose this - how?!"*
>
> *Charlotte: Only SLTs should be diagnosing DLD and SSD […] Ed psychs talk about SLI and that can be dangerous because they know loads about their bit, but they don't*

> *know loads about our bit. I would take any diagnosis from a non-SLT with a very major pinch of salt.*

When working in teams, some participants observed power dynamics, which resulted in a shift in roles for conducting diagnosis. Participants described the tension in team dynamics, particularly the power held by doctors in diagnostic processes:

> *Izzy: Paediatricians are perceived that they're more important than us so they've got the power to give a diagnosis. We don't have the power - but we should.*
>
> *Charlotte: Doctors have more power, from a medical model. A paediatrician would be head of a team even though they never make it to any meetings.*

Amongst other professions, participants reported that there was low awareness and understanding of speech and language therapy terms, and part of the SLT's role involved articulating the needs of the child. Some modified their use of terms based on the other professional's area of work. Generally, the health sector was perceived to be more receptive to diagnostic terms than those in education, but beyond speech and language therapy, the overall understanding was considered to be poor:

> *Nicole: Teachers in particular probably have the lowest understanding of diagnoses and what they encompass […] in terms of language disorder labels, virtually no-one understands those.*

To compensate for poor knowledge of terms, many either used tailored descriptions of a child's needs or alternative terms to convey diagnostic information. Achieving a shared understanding was generally considered to be more important than providing the diagnostic term. Harriet used the professional background to gauge her use of terms with each person:

> *Harriet: I'd probably use different terms working with health visitors compared to a psychologist.*
>
> *Kitty: When I'm talking to teachers I say "language disorder" or "speech sound disorder" - even though technically it's DLD.*

Some participants used nonspecific terminology in order to be accessible, choosing terms that were more recognisable such as "speech sounds" over "phonology". However, Heidi was concerned that broader terms might result in inaccurate assumptions being made about the definition. She acknowledged problems caused by the professional definitions of terms not aligning with public understanding of those terms, for example, the word "speech" which is often intended to indicate phonetics rather than “talking”:

> *Heidi: You’d need to explain it. A speech delay to us means phonetics and phonemes but a speech delay to most other people probably means “not talking”.*

The barriers to technical terms being understood beyond the profession were discussed in many interviews. Most participants recognised the context in which diagnosis was used to be influential. The range of professionals that participants worked with was widely considered to add complexity to their diagnostic practice, particularly when it impacted their role in the process.

#### 6.3.1.2 BT 20: Education and Health Tensions (Diagnostic Politics; SLTs as Diagnosticians)

Participants worked across a range of settings within education and health (for details by participant, see Table 4-7; Chapter 4). Whilst not all practised in both education and health settings, the majority had been involved in collaborative working with schools and NHS services together, for example when making referrals or communicating with other professionals involved in a client’s care. Working within each sector appeared to present different challenges, and some participants recognised differences in practice norms. Amongst interviewees, none considered that speech and language therapy was inherently health orientated, but some felt strongly that it was educationally rooted:

> *Elle: I’m a therapist so I’m firmly in the education camp.*

> *Grace: Speech and language therapy is an educational issue, but people get swept up by the medical. I think a lot of people in our profession are really to blame for that.*

Participants noted some differences between how health services and schools worked with diagnosis, and how this impacted their role. Many considered that diagnosis featured more heavily in health settings due to the emphasis on a medical model approach, whilst school staff were generally focused on the educational impact of a child's difficulties:

> *Kitty: The NHS does work on a more medical model […] there's probably a push towards using medicalised terminology.*
>
> *Elle: Schools don't understand the mass of diagnoses. If it won't impact what they're doing in school next term, they're not particularly bothered what it's called.*

In NHS settings, some SLTs recognised that diagnosis is applied in speech and language therapy often deviates from a traditional medical model approach. A few participants reported that medical colleagues queried the robustness of SLT diagnosis, particularly when descriptive language was used:

> *Elle: I do wonder whether as an allied health professional we have a duty to diagnose. We don't give a stronger diagnosis which makes us seem airy-fairy.*

Participants also observed an imbalance in how they were regarded as diagnosticians in education compared to health sectors. Generally, participants considered that their expertise was recognised more within educational settings:

> *Amanda: [Teachers] are just like okay, you're the professional, this is what you think, perfect, and then they go from there.*
>
> *Heidi: When you work with clinical professionals that go, you know, "it's a bit fuzzy, isn't it?" You know, and you're like "well actually, no. It might feel that way but it's actually not"*

Participants also identified a disparity between how other professionals perceived SLTs who practice in health, compared to SLTs who practice in educational settings. Nicole felt that the diagnostic decisions made by SLTs working in education were not respected in the same capacity as those working in health. She explained that NHS services often requested assessments from NHS-based SLTs, and was required to refer students on her caseload to NHS-based SLTs:

> *Nicole: I was told it wasn't my place to make diagnoses because I've always worked in education. It's seen as an NHS thing to do. I feel like the NHS therapists and their*

> *opinions would be held in higher esteem […] I always refer out because I feel that my clinical opinion won't be noted because I work in education.*

This created additional difficulties as referrals to specialist services were sometimes rejected, as clients were already in contact with an SLT. Although this experience was not shared by others, typically participants who practised in NHS settings viewed diagnosis as a requirement in their practice, which was not necessarily shared by those in education settings.

#### *6.3.1.3 BT 21: Service Constraints (Diagnostic Politics; SLTs as Diagnosticians)*

This basic theme explores how the service models, within which participants practised, impacted their diagnostic approach. Participants in the NHS worked with care pathways that had predetermined criteria for clients to access intervention. These participants had less flexibility in using diagnosis as it served a purpose to link clients with appropriate intervention. Participants often did not give clients a diagnosis if service criteria were not met. This was partly due to the ethics of giving a diagnosis, which was recognised to have negative connotations, without the capacity to provide the benefits associated with diagnosis, such as support:

> *Kitty: If you don't meet the criteria for our team, you could still have DLD. It's still having a significant impact but you would probably get no therapy.*
>
> *Grace: I think ethically if you're saying to someone "you've got a problem", and you're not then able to help with that problem, I don't see the point.*

SLTs who were working in private settings, such as clients' homes, described a different approach to diagnosis as their practice was not confined to a set model. These participants were able to both conduct assessments and provide intervention, whereas SLTs in public sector settings might only be involved for one stage of the process. In addition, as a diagnosis was not a prerequisite to access privately funded services, this provided flexibility for using it in practice:

> *Sandy: Sometimes a diagnosis is really helpful. Other times it doesn't make any difference, you just treat what's in front of you.*

In private settings, participants tended to have more autonomy about whether a diagnosis was shared, and usually had more time to introduce it to families. Charlotte described a preference for using a more descriptive approach when communicating with clients:

> *Charlotte: I have some where I've never talked about diagnosis. I'd be descriptive and say, "This is likely to be an issue longer term and it can respond very well depending on what we're doing". But I wouldn't say that means that your child has DLD - even though it does mean that their child may have DLD.*

Heidi, who simultaneously practised in the NHS, a university clinic and with privately funded clients, reflected on differences across her practice. In settings that were less prescriptive, it was possible to be more flexible with terminology use, compared to following NHS protocols:

> *Heidi: When it's going into official NHS records, there'll be things like referring to a paediatrician and going into hospital files. You're probably - not more careful - but there's more standard use of terminology.*

Participants working to clinical pathways sometimes had a role in negotiating services with external providers. Challenges were reported as a result of the DLD criteria, with the removal of a required discrepancy between non-verbal IQ and language scores. Participants reported that some services continued to require cognitive scores as part of organising provision, yet some participants were unable to access the assessments from educational psychologists as a result of the change:

> *Jackie: The panel admissions team are still saying we definitely need an ed psych report even though we argue the toss. Children are being rejected from panel because they haven't got any information around their non-verbal IQ.*
>
> *Caitlin: The problem with the DLD diagnosis is that we really need to have the educational psychologist's report.*

Overall, as a result of low understanding and clarity regarding the diagnostic categories that SLTs used, participants generally reported that working with external services exacerbated challenges in their diagnostic processes.

### 6.3.2 OT 8: Diagnosis in Speech and Language Therapy (SLTs as Diagnosticians)

This organising theme represents how participants perceived diagnosis to fit within speech and language therapy practice. Given the complex presentation of clients' difficulties and the heterogeneity across caseloads, most participants considered that it was essential for SLTs to be flexible with the use of diagnosis, as discussed in BT 22 "The SLT's Client Group". Permitting flexibility in decision making was considered essential due to the nature of clinical work, however, there was a perceived lack of guidance to support decisions as represented in BT 23 "Use of Clinical Judgement". It was considered that this may also reduce consistency across the profession. Several participants also felt that, due to the nature of the client group, the use of criteria and categories that are embedded in traditional medical model diagnostic processes are not always easily incorporated into their practice. Basic Theme 24 "Diagnosis: Misaligned?" explores the question of whether the use of diagnosis is compatible with the practice of SLTs.

#### *6.3.2.1 BT 22: The SLT's Client Group (Diagnosis in Speech and Language Therapy; SLTs as Diagnosticians)*

This basic theme represents the difficulties that participants described in applying diagnostic criteria to their client group. Participants reported that the needs of their clients rarely aligned with established diagnostic criteria, as the presence of comorbidity or multiple needs is large. Furthermore, many clients' needs presented dynamically over time.

> *Jessica: Things are always a bit woolly - it's not as clear-cut as, "we have diagnosed this patient with diabetes because their blood tests show it". We don't fit into a medical model in that respect; all the children are so different.*

Participants also noted that the changing needs of children over time was problematic for determining the most appropriate intervention, especially for long term planning, such as language unit placements:

> *Elle: A lot of them, you realise they're not SLI. But you couldn't shove them out halfway through Year 5.*

Clients often met criteria for multiple diagnoses at one time, and many participants considered that it was not necessarily beneficial for families to receive further diagnoses, especially if the child already had access to specialist support. Participants felt there was a need to be responsive to the presentation of each client, which could be achieved by describing their difficulties and needs. However, it was also recognised that diagnosis was sometimes necessary in order to align with other service models.

> *Sophie: If there's no need to assign an extra label for service provision, you think about whether diagnoses are useful.*
>
> *Elle: It's not a group that all present the same, and the outcome is the same and the therapy is the same. Every child is so different that it doesn't give you any idea about prognosis.*
>
> *Laura: We've always got to be a flexible profession, but equally in some ways we've got to adapt terminology to fit in with the way that services work.*

Due to the complexity of identifying needs, some of the services that participants worked in had made adaptations to the typical medical three-stage process of assessment, diagnosis and intervention. As a result, there was less need to use diagnostic terms, which permitted some flexibility. Izzy noted that this was not typical of other paediatric services:

> *Izzy: Most services in the UK provide only intervention if a child has a diagnosis. But where I worked it was needs-led, so whatever the child presented with - that's what we dealt with. We weren't interested in diagnosis.*

As the nature of the client group did not clearly align with a medical model of assigning categories, and as will be discussed, this caused participants to question the extent that diagnosis should be used in their practice.

#### 6.3.2.2 BT 23: Use of Clinical Judgement: (Diagnosis in Speech and Language Therapy; SLTs as Diagnosticians)

The act of decision making by healthcare professionals in clinical situations, based on their knowledge of theory and contextual factors, is termed "clinical judgement". This basic theme covers the role of clinical judgement in diagnosis which was used by participants to determine the nature and timing of the delivery of diagnostic information to clients. Clinical judgement was part of the individualised approach to diagnosis described by participants, and some considered it unfeasible to have a prescriptive profession-wide process for the diagnostic process:

> *Amanda: I don't think it should be a case of: "okay, they've got this diagnosis, you must then do this". It depends on the family and what they want. I know a lot of parents that have been hesitant but with time they change their mind.*

The flexibility in the clinical approach to diagnosis was generally deemed necessary by participants, in order to respond to the individual needs of families. In addition, the broad-ranging needs of the client group and challenges aligning with criteria was considered to require adaptability in the approach. However, it was also recognised that this could have a detrimental impact on overall diagnostic consistency:

> *Sophie: You might have a core definition but individuals will interpret that in whichever way they choose. So is it that we have to get more specific in the definitions? Or do we allow that flexibility? And I don't know the answer to that.*

Whilst most considered clinical judgement essential to responding to individual needs, several participants criticised the reliance on experience to inform practice. Some felt there was a need for more substantial theoretical material to follow in practice:

> *Jessica: I think that's part of the problem with our profession. A lot of it is experience and not concrete. You're often drawing on yours and others' experiences to help with that process.*
>
> *Nicole: They tell you to use your clinical judgement, but you're pulling it out of thin air because there is no guidance.*

There was a sense of frustration from participants that the lack of guidance also created difficulties for implementing an evidence based model of practice. Grace held the view that the overreliance on clinical judgement was detrimental to the profession:

> *Grace: They are nice people, SLTs, trying very hard to do a good job, yet dealing with an absolute paucity of evidence about effective interventions. I remember one saying*

> *to me really dramatically, "I can feel it in my heart when a child has a language disorder". What a load of absolute crap, you might as well be swinging crystals round the place if that's the case.*

Participants considered clinical judgement to be a core part of their practice, which is not unusual in medical fields. Due to the nature of the client group and the level of modifications deemed necessary, some felt that the profession stands out with regard to the extent of use in diagnostic practice.

#### 6.3.2.3 BT 24: Diagnosis: Misaligned? (Diagnosis in Speech and Language Therapy; SLTs as Diagnosticians)

This basic theme covers the perceived limitations of diagnostic categories in speech and language therapy. There was an overall view that diagnosis provided limited benefits clinically, and several participants considered it an overly medicalised action in an education-focused field of practice. As a result, some noted that diagnosis was conducted differently in comparison with other medical professions. Heidi stated that non-SLT colleagues had questioned the hesitance of SLTs around making a diagnosis:

> *Heidi: We do use diagnosis slightly differently to other professions. When I'm doing autism diagnostics with paediatricians, they say, "Can we write DLD as the diagnosis?" And I'd say, "No, I couldn't say that. We can rule out autism, but I wouldn't feel confident saying DLD". I get questioned, "What would it take for you to be able to say that?"*

Some participants queried the extent that speech and language therapy fits within a traditional model of using diagnosis. Grace took a strong opposing view to the medicalisation of the profession, with diagnoses serving little benefit. She felt that educational difficulties did not share the same characteristics as medical diagnoses, such as an established aetiology, or a clear intervention strategy:

> *Grace: Most developmental issues are of unknown aetiology, so it seems ludicrous to apply a label to them […] It goes back to the quasi-medical thing. Having the label developmental language disorder, whatever silly word you want to use, it's not a health issue at all, I think that's caused massive difficulties.*

Most recognised the limitations of specifying diagnostic categories and described using a more dimensional approach in practice, applying broad terms and description. For example, Sandy reported that this was more useful in complex cases, as the additional description could be individualised to the presenting needs of the client:

> *Sandy: It's better to use a generic term as speech sound disorders, and then tailor a description to the specific child.*

Diagnostic criteria featured in broad-based classification systems, such as the DSM or ICD were not used in practice by any participants, although the differences between a categorical and a dimensional approach were not explicitly referred to. Heidi suggested that it was because the diagnostic process of assessing clients against set criteria was not embedded in the profession:

> *Heidi: We wouldn't be using a DSM, language disorder is in there, but we don't refer to it. And it's probably because speech therapists didn't write it. […] I suppose we'd look at our RCSLT clinical guidelines, […] but we wouldn't sit at a desk and open up the ICD and go, do you meet these kind of criteria?*

Dylan commented that the assessments that were available in practice did not necessarily support determining diagnoses, but were instead used to indicate severity which also aligns with a dimensional approach. The Renfrew Action Picture Test (RAPT) was given as an example of an assessment that did not necessarily capture all areas of language, and this resulted in a reluctance to give a diagnosis:

> *Dylan: With the RAPT being an expressive one, it wouldn't give an overall language score and it wouldn't give a receptive score. So, I wouldn't want to give a diagnosis at that stage.*

The differences in practice compared to medical colleagues, the limited benefits, and the challenges in conducting assessment resulted in several participants avoiding diagnosis or using less specific terms to describe a child's needs. Generally, participants were highly critical of the appropriateness of diagnosis, particularly given the medical focus and the challenges of assigning clients to categories and many were critical of its role in their practice.

### 6.3.3 OT 9: Practical, Theoretical, Social Challenges (SLTs as Diagnosticians)

Often, due to a plethora of challenges, participants were not able to conduct diagnosis in a way that aligned with their views about how diagnosis should be used in practice, as presented in this organising theme. Basic Theme 25 “Feasibility of Assessment” presents the issues articulated by participants with regard to conducting full assessments. The availability of clinical time-restricted ability to use assessments, and many had problems accessing a full range of standardised tools. Participants placed great importance on using research outcomes to inform clinical decisions in diagnostic practice, however, as explored in Basic Theme 26 “The Relevance of Evidence”, many encountered problems in accessing and interpreting evidence. The lack of time available was also problematic in the delivery of diagnosis to families, as most were keen to introduce diagnoses carefully. Issues related to managing the social interaction as part of the delivery of diagnostic information are presented in Basic Theme 27: “Time to Talk”.

#### 6.3.3.1 BT 25: Feasibility of Assessment (Practical, Theoretical, Social Challenges; SLTs as Diagnosticians)

Most participants considered that conducting assessments was essential to determine diagnoses, yet many reported limitations in application. Some used the scores attained from assessments to inform both the diagnosis and the intervention strategy, but access and time were raised as key barriers. Accessing assessment tools that were both up to date and sufficient to capture the broad range of clients' needs was a challenge for several participants.

> *Dylan: One of the issues with doing formalised assessments is that I am limited by the resources I've got.*

Several participants articulated reluctance to diagnose in the absence of evidence derived from assessments. The time taken to complete assessments to acquire evidence to make a diagnosis was a barrier to several participants, which was important in feeling confident in the diagnosis:

> *Nicole: I've got more chance of finishing a PhD in 6 months than finishing a thorough assessment. But we can't just pull a diagnosis out the air.*
>
> *Danielle: I think there's the time issue in doing it properly and feeling confident about it and having the right assessment.*

Despite the recognised importance of evidence from assessment scores, due to the time constraints, Heidi stated that it was typical to prioritise commencing intervention with clients, rather than ascribing a diagnosis:

> *Heidi: If it's resource-driven, is that time better spent with intervention? […] If the most important thing is that the child starts communicating their needs. Sometimes you could get going with an intervention, and then revisit some of the more detailed assessments.*

An alternative perspective on assessment tools was that the subtypes produced were sometimes useful for intervention planning. However, subtyped terms were often not considered suitable for communicating with clients and teachers. Whilst Dylan used assessment tools such as the Diagnostic Evaluation of Articulation and Phonology (DEAP), functional descriptions were deemed more accessible:

> *Dylan: With the DEAP you have phonological disorder and about five sub-labels which I could give children. I haven't gone down that route […] With children I talk about difficulties with speech sounds […] with teachers, I have an ongoing conversation about what the ultimate goal is.*

Providing evidence for diagnoses was framed by many participants as being important. Some used the descriptors from assessment tools, such as the CELF, with a diagnostic function with scores acting to provide evidence for the use of the term:

> *Amanda: If we've used the CELF assessment we'd then use that evidence for terminology […] so we would say "language in the moderately low range for age".*

The obstacles to conducting full assessments reduced participants' confidence in making diagnostic decisions, partly due to the consequential lack of evidence to support their diagnosis. As stated by Amanda, this sometimes resulted in a preference for using generic terms as diagnoses, or terms that were associated with a given assessment which typically indicated severity, akin to a dimensional approach.

#### *6.3.3.2 BT 26: The Relevance of Evidence (Practical, Theoretical, Social Challenges; SLTs as Diagnosticians)*

Participants discussed evidence base as a vital component of their practice, and this basic theme covers its role and the perceived limitations. For some participants, diagnoses were a means to link the needs of clients with evidence based interventions:

> *Sheryllin: It's important, in terms of following evidence based interventions, to make the correct diagnosis, so the child is following the best pathway.*

Nicole talked about how this was reflected in her experience of preregistration training. Whilst the value of research was clear, she felt there was less clarity about applying evidence to components of diagnostic practice:

> *Nicole: We spoke a lot about the evidence base and its importance. But we never really spoke about what assessments to use and why psychometric properties is a thing. I've only very recently found out and I still don't completely understand.*

Many participants encountered difficulty in translating findings from research to practice, especially with diverse caseloads or clients with complex needs. There were several occasions during interviews when participants asked for clarification of their interpretations, particularly in relation to clinical diagnostic processes and the application of criteria. Some questioned the extent that research outcomes align with their own clients, and were sceptical about applying the outcomes of interventional studies in their practice:

> *Elle: You've got the research on very specific groups of children […] then you end up with children in real life which aren't textbook children in any way. And I think that really muddies the waters.*

Participants also felt that evidence was less relevant across the wider population, particularly in areas of lower socioeconomic status. Incidence data were of particular concern in relation to service criteria, and divergence was noted between client groups and outcomes from research conducted in areas of high socioeconomic status. Danielle considered that research statements about specific populations without guidance for clinicians was problematic:

> *Danielle: We had James Law at Primary Care Conference last year saying language disorder is an indicator of poverty, we're wondering what the incidence is in less well-off areas.*

Several problems were outlined with regard to incorporating research both across the profession and in their own practice, and some participants were concerned that evidence was not widely used in diagnostic practice.

> *Grace: I have absolutely no faith in public sector speech and language therapy. I don't think it's useful, it's not evidence-based, I think it's just a mess […] Millions of pounds of taxpayers' money is spent on funding a profession which basically is built on no evidence.*

Queries pertaining to the ecological validity of research outcomes drove uncertainty in applying them in practice. Overall, participants were acutely aware of the potential benefits of using evidence in diagnostic practice, but limitations to clinical translation caused considerable frustration.

#### *6.3.3.3 BT 27: Time to Talk (Practical, Theoretical, Social Challenges; SLTs as Diagnosticians)*

This basic theme covers the management of social aspects of diagnostic interactions with families. Participants recognised the potential emotional impact of receiving a diagnosis for parents, as discussed in Basic Theme 13 "Is the Family Ready for Diagnosis?" (BT 13; OT 4; GT 2). Some participants described taking on a counselling role, guiding families through a difficult experience, and the skills needed for this were considered to be integral to the SLT's role in the process. Diagnoses with a long term prognosis such as DLD were considered to be the most challenging for parents. Many participants talked about a need to build a rapport with clients and families before a diagnosis was introduced, in order to gauge the reaction. Danielle felt it was important to conduct diagnosis in a face-to-face meeting with parents, rather than relaying information in written reports:

> *Danielle: It's quite a big thing to tell parents that the child is going to have difficulties long-term, and we need to actually have that face-to-face meeting, we can't be just putting it on a report and sending it in the post, we need to be meeting parents and explaining and being a point of contact.*

Often, participants considered that there was not sufficient time to deliver a diagnosis to parents due to the support that some needed. Participants were less likely to share a diagnosis if there was less clinical time to manage the delivery of the diagnosis to parents. Dylan felt that it was important to have time to work through a diagnosis with families, and described reluctance to share a diagnosis without the opportunity to discuss potential anxieties. Instead, he considered that sending only quantitative scores in reports to parents was acceptable. This was largely due to his view that the diagnostic term was the aspect of diagnosis that carried the most stigma:

> *Dylan: If I had time to talk to parents, I could potentially introduce the term and talk about what it means and put them to rest (sic) that there shouldn't be a stigma to do with disorder, and talk around it. But because I don't have that time, I'd rather send a report out with scores, with percentiles and with descriptors of the categories.*

Limited time also had an impact on the type of terminology used by participants in practice. Particularly for clients when the time was limited, some reported using alternative diagnostic terms with parents:

> *Izzy: I think, when there isn't time, I would be softer in my terminology.*

Heidi prioritised sharing diagnoses honestly with parents regardless but recognised that it was easier when there was more time, and it was possible to see parents regularly:

> *Heidi: It's about being honest with parents. But we can see parents regularly here and we have that space to have the discussion - maybe we're quite privileged.*

Limited evidence to support diagnoses and the potential emotional impact contributed to a perception of risk involved in giving a diagnosis to families. As a result of practical constraints, participants were not always able to conduct diagnosis in the way that they considered necessary, resulting in avoidance or the implementation of alternative strategies.

### 6.3.4 Summary of GT 3 - SLTs as Diagnosticians

This GT made the claim that SLTs are conflicted about using diagnosis in clinical practice. Whilst participants talked about both the positive and negative aspects of diagnosis, many of them questioned whether it was appropriate in their practice and whether there was an alternative way to yield the same benefits. There was a strongly held view that speech, language and fluency diagnoses should only be made by SLTs, and in multidisciplinary team working they had essential and unique specialist knowledge. Participants discussed the differences in the perceived role of the SLT in diagnosis across education and health settings and the extent to which diagnosis was standard practice. Many participants felt that speech, language and fluency diagnoses did not align with a medical model approach, and as a hybrid profession, working with both health and education colleagues posed challenges to the terminology being understood. This also impacted their terminology use, as adaptations were made to account for the fragmentation of expert knowledge. Some participants felt that they conducted diagnosis in a different way to other professions, and given the highly variable clinical presentation of speech, language and fluency across clients, there was a perception that diagnosis does not necessarily align with the practice of SLTs. Diagnostic criteria were often not fulfilled and so participants often used alternative strategies to communicate diagnostic information. This included the use of broad terms and a description of each client's presentation. Some participants criticised the use of categories, and some described practising in a way that aligned with a dimensional approach, although none explicitly stated this. This was often implemented in reaction to constraints on their practice related to the place of work, such as time available to work with clients and their ability to access resources. Several questioned the extent that diagnosis can currently fit within the practice of paediatric SLTs, given the extent of the challenges.

## 6.4 Organising Relationships

Thematic networks demonstrated the relationships between issues occurring throughout interviews, which is key to understanding how themes interact. In the following analysis, the relationships will be explored at the level of OTs, and this is displayed in Figure 6-4. Coloured lines represent the different relationships linking the themes. Whilst these issues will be explored in full in Chapter 7, the following summary exposes the overlapping issues presented by participants which are core within the data.

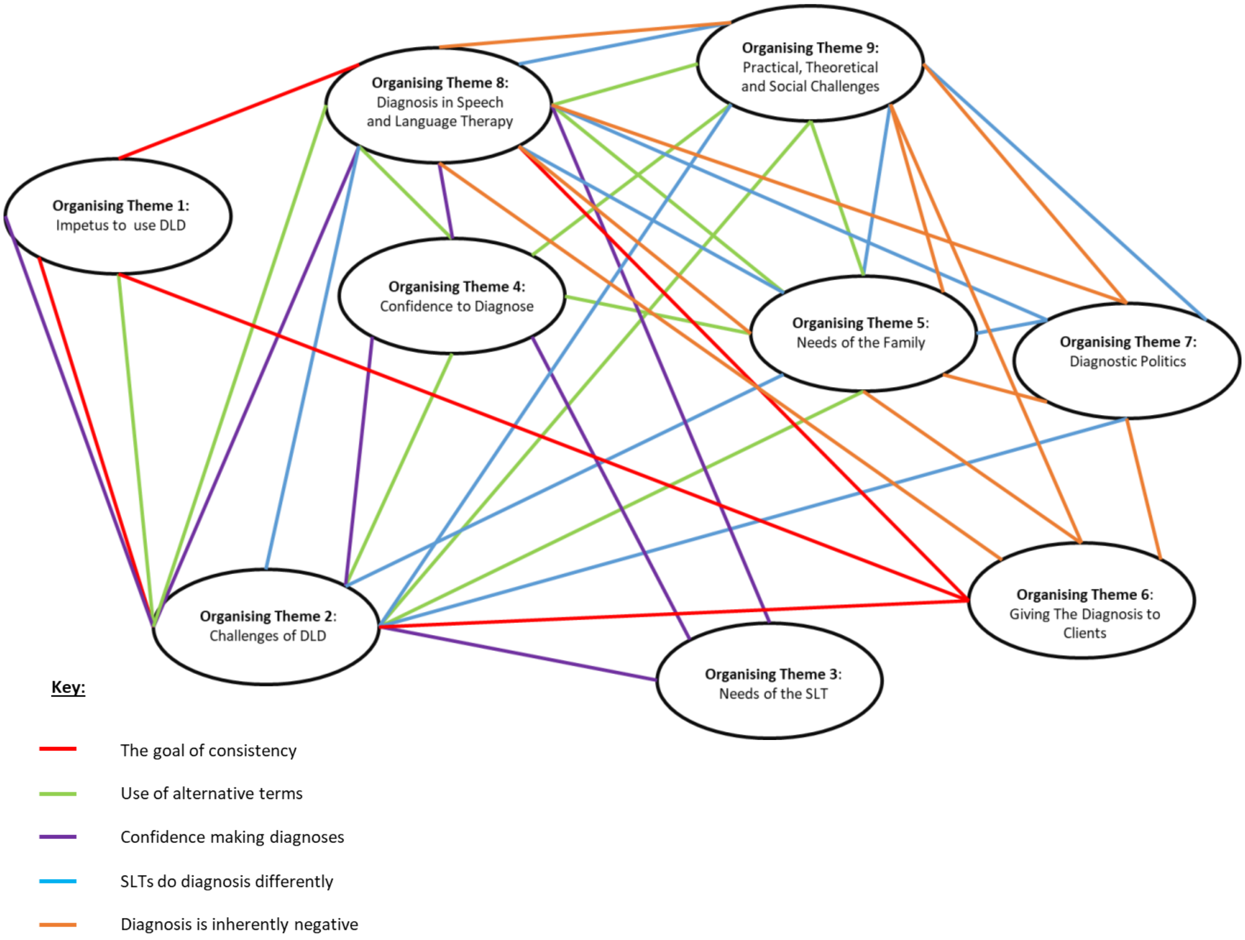


*Figure 6-4 Thematic network to show the relationship between organising themes*

The string of relationships shown in red lines in Figure 6-4 shows the organising themes that featured issues relating to the goal of consistency in terminology use across the profession. It transpired in OT 1 *Impetus to Use DLD* that terminological consistency across the profession was a widely shared goal across participants. It was therefore a strong motivating factor for participants to use the term DLD in their practice, despite numerous challenges. The potential for increasing public awareness was seen to hold benefits for clients, which was a high priority. However, participants recognised several barriers to attaining this goal, including - in OT 6 *Giving the Diagnosis to Clients* - the need to individualise terminology to meet the needs of families. In OT 8, *Diagnosis in Speech and Language Therapy* participants also described a need to use alternative terminology because clients often did not meet diagnostic criteria. Although participants were aware that this reduced the consistency of their terminology use, other issues took precedence, particularly establishing a shared understanding of the child's needs. In Chapter 8 the factors that impact terminological consistency are represented in a visual typology of practice.

The second cluster of relationships, use of alternative terms, is represented by green lines in Figure 6-4. Many participants described avoidance of diagnostic terms that denote a specific set of characteristics (e.g. DLD or phonological disorder), and instead broad terms such as "word finding difficulties" were used. There were several reasons for using alternative terms identified across OTs. Participants raised the issue that clients often did not meet diagnostic criteria for specific terms (OT 8 *Diagnosis in Speech and Language Therapy*), or this was challenging to determine through assessment (OT 9 *Practical, Social, Theoretical Challenges*). Additionally, criteria were often considered challenging to interpret (OT 2 *Barriers to Using DLD*), resulting in reticence to give a specific term for fear of it being wrong (OT 4 *Confidence to Diagnose*). Participants also reported using alternative terms to soften the impact on families, and to ensure that they understood the diagnosis (OT 5 *Needs of the Family*). As parents and professionals were often perceived to have poor knowledge of terminology, participants often prioritised conveying diagnostic information effectively by adapting their use of terms (OT 6 *Giving the Diagnosis to Clients*). The avoidance of diagnostic terms is explored further in Chapter 7, and the underpinning reasons are displayed in a visual model of practice in Chapter 8.

The participants in this study generally reported low confidence in making diagnoses, which forms the cluster of relationships shown in purple lines in Figure 6-4. Low confidence to give a diagnosis was often a result of uncertainty in the interpretation of diagnostic criteria, as shown in OT 2 *Challenges of DLD*. Training in making diagnoses was considered poor, both in terms of CPD opportunities (OT 3 *Needs of the SLT*) and initial university training (OT 4 *Confidence to Diagnose*), which contributed to low confidence when participants were newly qualified or a change was introduced. OT 4 *Confidence to Diagnose* demonstrated how confidence in diagnostic practice was widely considered to be dependent on the amount of experience participants had in the clinical role. This was partly due to the extent that clinical judgement was required in the diagnostic process and the perceived limitations of current evidence and guidelines (OT 8 *Diagnosis in Speech and Language Therapy*). Chapter 8 features a section on *Implications for Practice* derived from this research, which includes a discussion of potential strategies to address low confidence in diagnosis across the profession.

Many of the problems associated with diagnosis in practice were considered to be consequential to the nature of speech and language therapy, leading to the idea that SLTs do diagnosis differently, represented by blue lines in Figure 6-4. Participants recognised that because of the complexity in presentation of their clients' needs, and the limitations of assessment and criteria (OT 2 *Barriers to Using DLD* and OT 9 *Practical, Theoretical and Social Challenges*), the way that diagnosis is used in speech and language therapy is distinct from other professions (OT 8 *Diagnosis in Speech and Language Therapy*). Within OT 7 *Diagnostic Politics*, the notion of diagnosis being an overly medicalised concept was raised, as most participants considered speech and language therapy to be a hybrid of education and health practice. Because of this misalignment of diagnosis with speech and language therapy, participants suggested that there were strong reasons not to use it in practice. Many disadvantages were raised, particularly the potential stigmatising impact (OT 5 *Needs of The Family*), and some participants questioned whether this outweighed any clinical benefits.

Another issue that was recurrent throughout themes was the idea that diagnosis is inherently negative, a view that guided the diagnostic approach and terminology use of participants. The OTs that illuminated this finding are shown in orange lines in Figure 6-4. In OT 5 *Needs of the Family*, participants discussed how the receipt of a diagnosis could be emotionally difficult for families. In response participants employed strategies to ease the process, such as sharing the diagnosis gradually, or avoiding terms considered to be problematic - such as “disorder”. OT 6 *Giving the Diagnosis to Clients* revealed that concern about the emotional impact was a very high priority for participants, and many reported making adaptations to their diagnostic process depending on individual circumstances. Several participants actively avoided giving a diagnosis, unless required for access to provision (OT 7 *Diagnostic Politics*). Often, participants described barriers in practice which meant that they were unable to conduct diagnosis in a way that they deemed satisfactory (OT 9 *Practical, Theoretical and Social Challenges*). This was considered to enhance the negative aspects of diagnosis, causing several participants to question the use of it in their own practice and across the profession (OT 8 *Diagnosis in Speech and Language Therapy*). The negative implications of diagnosis in the context of contemporary practice will inform the discussion and implications for practice presented in Chapter 8.

## 6.5 Summary of Analysis

The analysis of the data from 22 interviews with SLTs revealed core themes that affect how the act of diagnosis is approached in practice and some of the ways that terminology is used. One of the most striking findings was the low confidence described in making diagnoses, which was a predominant feature across all global themes. Factors contributing to low confidence included unclear guidance, unavailable or insufficient training, and a recognition of the significant impact of diagnosis for families, which rendered it a high risk task. There was a widely held view that the training for conducting diagnosis was limited both in preregistration training and the availability of CPD. Gaps in clinical guidelines for diagnostic processes were described, and many experienced difficulties in implementing evidence into practice. Clinical judgement and personal experience were used to determine whether to give a diagnosis, the timing, and the terminology used. Participants were more confident if they had more experience in practice or had access to supportive networks with other SLTs (e.g. CENs and clinical supervision).

As the role of diagnosis in the practice of SLTs is not definitively outlined in professional guidelines, participants described how the clinical context often affected their diagnostic approach. *Global Theme 3: SLTs as Diagnosticians* revealed that clinical influences were practical (e.g. limited time with clients and access to assessments), theoretical (e.g. knowledge of the evidence base, unavailable guidance and the complexity of clients' presentation), and social (e.g. the parental response, social stigma and understanding of terminology). The social context played a significant role, and participants described modifying their use of terminology depending on the needs of each family. Interviewees described the importance of adapting their terminology to ensure that it was accessible to the broad-ranging needs of families and other professionals.

In response to the challenges and the negative perceptions of diagnosis, it was typical for interviewees to report avoidance of specific terms such as “phonological disorder”, “DLD” or “cluttering”, which describe a narrow range of characteristics. These were perceived to be difficult for people outside of the profession to understand, associated with more social stigma compared to broader terms, and required substantial evidence in reports. Strategies to avoid the negative consequences of specific terms included describing needs without giving a diagnosis, lifting terms from assessment tools (such as the CELF), and using broad or colloquial terms. An example of a broad term was “speech, language and communication needs (SLCN)” as it encompasses a wide spectrum of needs. Colloquial terms such as “bumpy talking” were considered recognisable and easier for non-SLTs to understand.

Whilst views and experiences varied between participants, there were many overlapping ideas that produced powerful areas of consideration. The issues arising from this analysis will be critically explored in further depth and integrated with the quantitative findings in the next chapter, using the context of current literature to address the research questions and explain the novel contribution to knowledge of the current study.

# CHAPTER 7: DISCUSSION

This research set out to identify and understand the terminology use and diagnostic approach of paediatric SLTs in the UK. A sequential explanatory mixed methods design was used to provide insight into this area of clinical practice. The use of quantitative and qualitative methods enabled both a broad and in-depth investigation to address the 3 research questions:

1. What terminology is used by paediatric SLTs in the UK to denote primary speech, language and fluency diagnoses?
2. What factors underpin the diagnostic terminology used by paediatric SLTs in the UK?
3. How do paediatric SLTs approach making diagnoses in practice?

The results of the survey produced evidence to show the diagnostic terminology used by SLTs in the UK, which interviews sought to explain and contextualise. In this chapter, the findings are discussed in relation to current evidence, clinical guidelines and theory. Findings from both methods are compared, contrasted and merged to produce the contribution to knowledge arising from this work. The terms used in clinical practice, and the potential underpinning factors behind this, is first discussed. The diagnostic approach of SLTs is then explored, showing the generative mechanisms that interact within varying social contexts which result in some fundamental emergent concepts.

## 7.1 Terminology Use of SLTs in the UK

As identified in Chapter 2, a recurrent theme across the literature has been the problematic existence of multiple terms used to denote primary language diagnoses (Leonard, 2020; Reilly et al., 2014a; Walsh, 2006). However, sparse empirical evidence from prior research was found to show the clinical terminology use of paediatric SLTs in the UK. This study seeks to fill this gap through addressing research question 1, using the findings produced by the survey. Using Likert scales, 374 participating SLTs reported the frequency of their clinical use of diagnostic terms across speech, language and fluency. As detailed in Chapter 5, responses never-always were assigned a numerical value of 0-4, and summed for each term. To provide an overview of the most popular terms, Table 7-1 includes those which generated a score of at least half the maximum total of 1496:

| SPEECH | LANGUAGE | FLUENCY |
|---|---|---|
| Phonological disorder (914)<br>Phonological delay (891)<br>Speech sound disorder (834) | Developmental language disorder (1034)<br>Language difficulty (receptive/expressive) (889)<br>Language disorder (794)<br>Language delay (757) | Dysfluency (1130)<br>Stammering (1084) |

Table 7-1 Terms for speech, language and fluency that reached a popularity score of more than half the maximum total

The number of terms with similar definitions used with high frequency indicates that there is some degree of variation in terminology use across UK clinical practice. The analysis also revealed that 7 speech terms, 5 language terms and 2 fluency terms were used at least *sometimes* by over half of the sample. This also shows that there are multiple terms used to describe similar categories, which indicates terminological inconsistency across UK clinical practice. However, it is perhaps the wide range of "other terms" submitted as free-text responses that were most revealing (see Table 5-3 in Chapter 5). The number of terms submitted illuminates the fluidity and linguistic creativity at work in the profession, to the detriment of consistency. Walsh (2005) also noted that SLTs modify terminology in practice to suit needs within their practice, potentially resulting in such terms being falsely perceived as legitimate clinical entities.

There are patterns to the terms that were the most popular; for speech and language, the qualifiers “disorder” and “delay” were popular in this sample. Qualitative findings provide context to this finding, as some interviewees noted that differentiating between a delay and a disorder supported intervention planning. The current study potentially indicates a discrepancy between perspectives and priorities for terminology between research and practice. Joffe and Pring (2008) found that many SLTs differentiate between delays and disorders for speech diagnoses in practice, and Dodd (2011) suggested that this is due to the usefulness of the distinction for determining intervention. Previous literature has also identified the clinical utility of differentiating “delay” from “disorder” for primary language diagnoses (Gallagher et al., 2019; Huang et al., 1997; Walsh, 2005), despite being challenging to differentiate (Reilly et al., 2010). The use of the term “delay” has been criticised the potentially misleading implication of spontaneous resolution (Lascelles, 2013; Reilly et al., 2014a) and the CATALISE project made the recommendation to abandon the distinction due to a paucity of evidence to differentiate intervention outcomes of children diagnosed with a delay or a disorder (Bishop, 2017). Paul (2020) suggested that the term “language delay” might be maintained in the US even if DLD is adopted by clinicians. The current study confirms that delay and disorder appear to be useful terms, however, given the timing of data collection, it is possible that this may be reflective of a transitional period of adjustment to the recommendations of the CATALISE project.

For both speech and language, the terms “problems” “impairment” and “disability” were relatively unpopular which, as will be discussed, might reflect movements in disability theory (Kenny et al., 2016; Oliver and Sapey, 1983). Impairment is the official term used by the ICF (World Health Organization, 2007) to describe the aspects of disability, however, interviewees reported that broad classification systems (such as the ICF, ICD and DSM) were not particularly relevant in their diagnostic practice. Both “specific language impairment” and “primary language impairment” are terms commonly used in US research (Bishop, 2014; Kohnert et al., 2009), and “specific language impairment” is thought to be maintained in clinical practice in the US (Leonard, 2020; Murza and Ehren, 2020; Paul, 2020), although no empirical evidence was found to support this. The finding that “impairment” is used infrequently in UK clinical practice indicates differing use of terminology internationally, which may reduce consistency.

This study indicated fewer terms in frequent use for fluency diagnoses relative to speech and language; thus implying relatively less variation. This is reflective of the stability of fluency terminology over time as identified by the literature review. The reasons for this finding are not clear, however, and many interviewees reported low confidence working in the area of fluency. The lack of fluency specialists participating in both phases of the study is reflective of the wider profession (Crichton-Smith et al., 2003; Pring et al., 2012). It has been suggested that - whilst the "hidden" nature of the presentation of language difficulties may contribute to challenges with the diagnostic process (e.g. Kamhi, 2004) - fluency is considered to have recognisable aspects (Blumgart et al., 2014). The interview findings did not wholly support or dispute this suggested explanation, but several participants confirmed that the “hiddenness” of language increased the difficulty of diagnosis. Congruent with the results of the survey, most interviewees reported using the term “stammering” or colloquial alternatives.

"Bumpy speech" was a common example of a "child-friendly" term provided by interviewees, and was also submitted by 12 survey participants as a free text response. It was not included as a diagnostic term in the survey as it did not feature in academic literature and is descriptive of fluency characteristics rather than diagnostic. The findings of this research imply that colloquial terms are used with a similar function to formal diagnostic terms which was not observed in previous literature. It was reported that colloquial terms were generally used for communicating with parents and professionals, rather than reports or formal documentation such as Education and Health Care Plans (EHCPs). This evidence supports the idea proposed by Walsh (2005), that terminology differs depending on whether the context is profession-specific (e.g. guiding intervention and reports) or public-facing (e.g. communicating with families).

The use of person-first terminology (such as “person who stammers”) is a controversial issue in disability theory (Dunn and Andrews, 2015) and has been debated across literature for fluency diagnoses. No examples of person-first terminology were submitted as free-text responses to the survey, and it was not raised by interviewees. Research indicates an overall preference amongst adults who have received a diagnosis for “person who stammers” over “stammerer” (Louis, 1999), however, this does not necessarily extend to children. If clients have a preference for person-first terminology, using it is recognised to be an important part of inclusive practice (RCSLT, 2018a). A possible explanation for this is that participants were unaware of relevant disability movements or the stance taken by RCSLT. The qualitative data indicate that participants employed other strategies to practice inclusively, such as mirroring the language of parents and clients or using broader terms that were considered accessible and inclusive. It is possible therefore that the use of person-first terminology was unnecessary as an additional means to incorporate the preferences of paediatric clients.

The findings also illuminate issues related to the role of broad-based classification systems devised to promote diagnostic consistency (such as the ICD and DSM) in clinical practice. Speech, language and fluency diagnoses are included in both the DSM 5 and ICD 10 (APA, 2013; World Health Organization, 1992), although it has been recognised that they are used sparsely in research (Reilly et al., 2014b). For speech diagnoses, “speech sound disorder” is recognised in both ICD 10 and DSM 5 and “phonological disorder” is included in ICD 10, and both terms were used with high frequency in the survey sample. These terms also feature in the Diagnostic Evaluation of Articulation and Phonology (DEAP) (Dodd et al., 2002) and the subtypes proposed by Shriberg et al. (2010), so this alone does not indicate what resources SLTs use to classify diagnoses. For language terms, “language disorder” is the only primary language diagnosis in the DSM 5, and is also recognised in the ICD 10. Although it was used with high frequency in the sample, it is also a term recommended by the CATALISE project, with “developmental language disorder” which was the most popular term. The survey also found that language difficulty (receptive and/or expressive)” was also a high frequency term which is similar to the ICD-10 term “mixed receptive/ expressive disorder”. However, interviewees reported lifting the term from the Clinical Evaluation of Language Fundamentals (CELF) assessment tool. Regarding fluency, the term listed in both ICD 10 and DSM 5 is “fluency disorder”, and was used with low frequency in the sample. It is possible that SLTs in the UK use the term of the national organisation STAMMA (previously known as the British Stammering Association). Collectively, findings from the survey and interviews indicate that profession-specific resources are used to support terminology use, in favour of the DSM or ICD. As has been speculated in previous literature (e.g. Paul, 2020), one interviewee suggested that neither the ICD nor DSM are considered relevant by clinicians. It is apparent that there are factors beyond the selection and interpretation of classification systems that influence the terminology used in clinical practice.

### 7.1.1 Factors Underpinning the Terminology Use of SLTs in the UK

By addressing research question 2, this study aims to uncover the reasons for SLTs’ use of terminology. From a DCR perspective, the identification of factors that underpin observable events, termed *generative mechanisms*, is considered to be a high priority for social research (Bhaskar, 2008). The survey quantitatively investigated associations between individual variables with a narrow scope, however SLTs practice in social contexts - described in DCR as *open systems* - where multiple factors interact to produce observable events (Alderson, 2013). Interviews provided a holistic means to explore areas that SLTs recognised to be influential to their use of terminology (Creswell and Plano Clark, 2017). By triangulating the findings, a richer understanding can be obtained than is achievable with singular methods (Campbell and Fiske, 1959; Cohen et al., 2013).

#### *7.1.1.1 Region of Practice*

Of the factors investigated by the survey, this variable produced the most statistically significant associations with terminology usage. Whilst there was apparent variation in terminology across the UK, the results did not indicate definitive regional patterns. Participants practising in Wales and Northern Ireland were more likely to use terms that were relatively unpopular amongst the whole sample, but it is not clear why this has emerged. One interviewee reported that training opportunities were often based in London, which was difficult for some SLTs to access. In relation to DLD, SLTs in Southern England were more likely to use the term than any other area of the UK. Access to training was a strong theme across interviews in relation to participants' diagnostic practice and has been identified as an important factor in supporting SLTs with implementing change (Kamhi, 1995). It is possible that training was an influential factor in this regional difference, and this possibility could be pursued in future research.

RCSLT provides some separate policies for each country in the UK, which was considered as a possible contributing factor. Interviewees reported an overall lack of guidance and policy in relation to diagnosis, so differences are unlikely to have caused the regional variation detected by this study. Given the sample size, it was not possible to investigate variation in practice at a localised level, which could have reflected nuances in services or commissioning groups. This may have revealed meaningful differences, given the evidence that speech and language therapy services vary across the UK (Hancock, 2019). In the context of NHS speech and language therapy, UK regional differences might reflect service level decisions regarding terminology usage, as suggested in interviews. Differences across services will be discussed further in relation to diagnostic approaches.

#### *7.1.1.2 Workplace Characteristics (Employment Sector and Setting of Practice)*

The survey investigated participants' employment sector and setting of practice separately, but in interviews, these were usually discussed as one issue - at the level of service provision. These have therefore been combined as a consideration of workplace characteristics. Some statistically significant associations were produced by the survey with regard to participants' employment sector and setting of practice, but there were no clear patterns that could be identified across associations. Interviews revealed that service models were influential to the use of terminology, which is congruent with the findings of Fulcher-Rood et al. (2018) and Selin et al. (2019). In particular, interviewees were more inclined to use terms as part of a diagnosis if it was required for a named NHS care pathway. Those who practised within less strict models, such as schools or private services, generally used specific terms only when necessary; such as when contributing to an EHCP. This nuance was not captured in the survey which investigated the overall terminology use of participants, rather than context-specific.

A few interviewees considered that NHS settings had better access to resources such as assessment tools, compared to schools or independent practice. Assessments such as the CELF and the DEAP (Dodd et al., 2002) were used to provide evidence for diagnoses and thus increased participants' confidence to use associated terminology. However, there is insufficient evidence from this study to indicate a difference between NHS and non-NHS based SLTs. Previous research with school-based SLTs in the US also found that SLTs highly valued assessment scores in making diagnoses (Fulcher-Rood et al., 2019; Selin et al., 2019). As the relationship between assessment scores and confidence to diagnose has not previously been investigated, the current study offers an additional explanation for the reliance on assessments.

DCR encourages researchers to consider the social world from the perspective of four planes of being (Alderson, 2013). By investigating the setting of practice, this study sought to investigate how *material relations* impacted the use of terminology. However, interviewees instead discussed the *broader social relations* within workplace characteristics and *interpersonal subjective relations* with colleagues. Often SLTs adapted their terminology use based on the knowledge background of other professionals and the typical mode of practice within different settings. Some interviewees reported using more technical terms with health professionals compared to education professionals. This may not have been detected by the survey as many SLTs liaise with various professionals as part of their work with clients, regardless of the setting that they practice in; for example, most SLTs who mainly practice in schools also communicate with professionals in the health sector (RCSLT, 2018e). In line with previous research (Pring et al., 2012), the survey also identified that the majority of SLTs practice in multiple settings. The findings highlight the complexity of the social dynamics involved in terminology usage, which indicates the limitations of measuring associations from a purely quantitative perspective. Walsh (2005) proposed a model that demonstrates the development of different sets of terminology for use in either profession-specific or public-facing purposes. The findings of the current study highlight that settings are multifaceted, the need to adapt terminology for different professional groups indicates blurring between professional and public contexts. Dockrell et al. (2017) observed that teachers generally have a weak understanding of specific terms, and are more familiar with broad terms such as "SLCN". The findings of this study suggest that in recognition of this, SLTs adapt their own terminology use with teachers. The avoidance of poorly recognised terms potentially perpetuates the weak understanding and awareness of diagnostic terms amongst other professionals.

#### *7.1.1.3 Clinical Specialism*

Clinical specialism produced few statistically significant associations with the use of terminology. In interviews, it was raised that when practising within their specialist area, SLTs were more confident to make diagnoses. This was however not a consistent finding, and some interviewees who were specialists in DLD expressed more deliberation around the diagnostic criteria. The survey also revealed that participants with a specialism in speech were less likely to use "consistent/inconsistent phonological disorder" than participants with any other specialism and, although it did not reach statistical significance, participants with a specialism in language were relatively less likely to use "DLD". A survey of 516 paediatric SLTs in the UK found that there are relatively few specialists in fluency (17.6%), particularly compared to speech (30.8%) and language (39.7%) (Pring et al., 2012).

The relationship between confidence and specialisms in SLT has been identified in previous research. In a survey of 270 SLTs in the UK, 31% self-rated as not confident in treating fluency clients, which is arguably a concern (Crichton-Smith et al., 2003). A survey of 278 school-based SLTs in the US found that US SLTs had experienced poor clinical training in fluency, and expressed low confidence working in the area (Brisk et al., 1997). Such findings might imply that SLTs are not confident when practising outside of their specialist area, however, it has also been suggested that SLTs have the most awareness of any gaps in evidence within their specialism, and may therefore be the least confident (Plumb and Plexico, 2013). Supporting this idea, a survey of 67 US-based SLTs revealed several deficits in respondents' knowledge of autism, yet their confidence to provide services to children with autism was disproportionately high (Schwartz and Drager, 2008). It should be noted that these studies were conducted with US clinicians and did not focus on primary diagnoses. However, such findings indicate that the relationship between clinical specialism and terminology usage may also interact with the clinician's level of confidence.

#### *7.1.1.4 University Attended*

The analysis of survey data revealed no statistically significant associations between university attended and the use of terminology, and there are several possible reasons to explain this. The sample size was too small to maintain the grouping of participants by university and, unlike other variables, there were limited logical ways of merging groups. Using the pre- or post-1992 status of the university was tenuous, and the results showed that this divide does not impact terminology use. As all UK SLT courses are standardised and regulated by RCSLT and HCPC, there may not have been differences between individual universities. There may also have been a temporal effect depending on when participants trained. Interviewees did not generally consider that the nature of their clinical training had an impact on their terminology use; one speculated that the specialisms of lecturers had impacted her theoretical basis compared to colleagues. A high degree of variation was found in the inclusion of research training in a study comparing preregistration programmes for SLTs in the UK (Pagnamenta and Joffe, 2018). Several US studies have also indicated differences between institutions on the mandatory inclusion of specialist areas such as autism (Plumb and Plexico, 2013) and cleft palate (Vallino et al., 2008). Studies reporting the views of clinicians on their training indicated that deficiencies in initial training may contribute to long term reduced confidence in particular areas of practice (Cascella and Colella, 2004; Blood et al., 2010; Plumb and Plexico, 2013).

Overall, interviewees in the current study expressed a largely negative view towards university training in diagnostic practice, regardless of where they trained. Similar findings of low satisfaction with clinical training have also been attained in previous research. A survey of 82 US-based SLTs revealed that the majority considered the preparation for practice to be inadequate with regard to diagnosing and treating clients with autism (Cascella and Colella, 2004). Blood et al. (2010) also found overall dissatisfaction in relation to university training in a survey of 599 US-based SLTs, particularly in the area of fluency. Graduate training in the US has been widely criticised for a lack of fluency content (Yaruss and Quesal, 2006), but this appears not to have been studied in the UK. No similar recent research was identified with a focus on speech or language, or UK graduate programmes. Eadie (2005) and Schuele and Hadley (1999) speculated that clinical training in diagnostic processes may be insufficient for the needs of NQPs, thus contributing to low confidence. The current study indicates a call from SLTs in practice for preregistration programmes in the UK to include training in diagnostic practice.

#### *7.1.1.5 Time in Practice*

Time since registration with the professional body produced some associations that reached statistical significance, all of which were related to participants in the earliest or latest period investigated. Generally, participants who were registered in the earliest period (1960-1989) were more likely to use terms that were relatively unpopular amongst the rest of the sample (e.g. "language problems"). Differences might have been related to the lack of opportunities for updating clinical training that was reported by interviewees. Survey participants who were registered in the last decade (2010-2019) were less likely than the rest of the sample to use the term "SLI", which was succeeded in RCSLT literature by

"DLD" in 2017 following recommendations of the CATALISE project. Some interviewees suggested that it was challenging for experienced SLTs to change their practice, and the introduction of DLD had not been effectively communicated across the profession. Interviewees reported that making a change in practice is highly challenging, and this has also been suggested in previous literature (Cunningham et al., 2019; Kamhi, 1995). Therefore, this finding may be explained by SLI being embedded in the practice of relatively more experienced clinicians.

Qualitative findings indicated that SLTs who were newer to practice were avoidant of terminology that was perceived to be more technical, due to less confidence and experience in specialist skills. Compared to those who had been in practice longer, participants registered in the decade 2010-2019 were less likely to use the term "developmental verbal dyspraxia". It has been anecdotally noted that there has been a reduction in the use of this term following criticism that it was over-diagnosed (Davis et al., 1998; Marquardt and Gillam, 1999). An RCSLT policy update recommended that SLTs use "childhood apraxia of speech" (RCSLT, 2011) and, although it did not reach statistical significance participants registered in the decade 2010-2019 were more likely than all other groups to use this term. This mirrors the pattern of SLI and DLD - and taken together alongside the qualitative results, these findings suggest that experience in practice and change processes are influential in terminology usage.

#### *7.1.1.6 Access to Research and CEN Attendance*

Analysis of survey data revealed that both access to research and CEN attendance produced very few statistically significant associations with terminology usage. Participants who reported good access to research were less likely to use the term "stammering" compared to those who reported poor access. This could reflect the highly prevalent use of the term "stuttering" in research, compared to the dominance of the term "stammering" across grey literature in the UK. Many interviewees discussed their access to research and engagement with CENs in reference to their diagnostic practice. Those experiencing challenges in accessing and interpreting research outcomes felt that this lowered their confidence to use terminology with specific criteria; largely due to the risk of giving an incorrect diagnosis without a thorough knowledge of the evidence base. However, even those with good access reported problems, which may explain the lack of associations detected by the survey. The diverse presentation of clients' diagnostic characteristics caused interviewees to question the relevance of research conclusions derived from relatively homogeneous samples.

Research has shown that SLTs are poorly supported to implement evidence into practice (Mullen, 2005). Several interviewees felt that there had been insufficient guidance from the professional body to support the clinical application of CATALISE recommendations. Whilst the survey indicated that CEN attendance was generally not related to the use of terminology, several interviewees focused on the value of networking with peers. This was often perceived to be a supportive factor in building confidence to diagnose, by providing opportunities to discuss the evidence base and understanding of criteria. There has been minimal research to evaluate the value of special interest groups in health. A qualitative questionnaire conducted with six nurses revealed that attending research groups was perceived to provide a valuable opportunity to share experiences and knowledge relevant to practice (Tori and Morley, 2011). RCSLT encourages members to attend CEN and Hub meetings, as an accessible means for sharing knowledge, continuing professional development and maintaining skills (RCSLT, 2014). Despite the value of peer support and clinical supervision for the wellbeing and confidence of clinicians (Kilminster and Jolly, 2000), several UK studies report that SLTs do not receive a sufficient amount for their needs (Ward et al., 2012). This study contributes further evidence that strategies to facilitate access would be beneficial to the UK workforce.

### 7.1.2 Summary for Terminology

The diagnostic terminology used by SLTs in UK clinical practice was identified by the survey to address research question 1. The high frequency use of several terms with similar definitions shows the extent of variation in the terms used by SLTs in clinical practice. Some patterns were identified, such as the prevalent use of "delay" and "disorder" for speech and language, which for language, is no longer recommended (Bishop et al., 2017). However, the free-text responses and interviews indicated that the terms presented in the survey may not be the only terms that are commonly used by SLTs. In both the survey and interviews, participants reported using colloquial terms with diagnostic function, which was a surprising finding of the research.

To address research question 2, both methods sought to identify generative mechanisms that underpin terminology use. There were relatively few associations between variables investigated by the survey and terminology use that reached statistical significance. The survey was arguably limited to investigating single variables that do not capture the full complexity of terminology use and diagnosis. Interviews offered rich insights to supplement this data, demonstrating the benefits of a sequential explanatory mixed methods approach (Creswell, 2003). Some possible differences pertaining to when SLTs trained and the settings in which they practice were identified, and interviewees provided clinical context to further explain relationships. A clear theme running through most factors investigated was the confidence of clinicians, and the impact this has on willingness to use certain terms. As the next section will explore, it is perhaps the diagnostic approach and related core issues that have the most influence on terminology.

## 7.2 Diagnostic Practice of SLTs in the UK

Interviews sought to reveal the approaches to diagnosis taken by SLTs, and the findings revealed that they are complex and often varied. However, some emergent concepts have been identified that were a product of interacting core issues. Interviewees provided accounts of their empirical reality, with insight to events that occur at the level of *actual* reality: how diagnosis is conducted by SLTs. Many research philosophies do not account for the generative mechanisms that underlie emergent concepts (Bhaskar, 1975), but in seeking to identify these mechanisms, a collection of core issues that underlie the diagnostic approach of SLTs has been recognised. Table 7-2 presents a summary of aspects of the diagnostic approach taken by SLTs and core issues, which are examined in detail with reference to current literature and evidence:

| DIAGNOSTIC APPROACH | UNDERLYING CORE ISSUES |
|---|---|
| • Use of a dimensional approach<br>• Prevalent use of colloquial terms and description<br>• Individualising the approach to families<br>• Using clinical judgement<br>• Timing and avoidance<br>• Low confidence | • Challenges of using diagnosis in a non-medical profession<br>• System barriers within services<br>• Varying needs of families<br>• Perception that specialist terminology is inaccessible to parents and professionals<br>• High social stigma<br>• Dearth of clinical guidance and weak evidence base |

*Table 7-2 Diagnostic approach and core issues identified*

### 7.2.1 Diagnostic Approach

This study has identified that diagnosis is a highly variable and context-dependent component of the practice of SLTs in the UK, which is reflective of the varied nature of the SLT role (Pring et al., 2012). Interviewees in this study discussed having autonomy in developing an approach to diagnosis, often framed in the context of having limited guidance to follow. Most had developed an approach that was informed by their previous clinical experience and personal views. Many described making modifications to the process depending on the social context and practical features of the systems that they operated within. It was therefore not possible to identify a single approach to diagnosis that represents the practice of SLTs in the UK working with paediatric clients. Not all SLTs followed a three-stage approach of: assessment; diagnosis; treatment. Some reported avoiding diagnosis as far as possible, whilst for others, it was a significant part of their practice. One participant described conducting assessments and assigning "labels" but did not consider that they made diagnoses in practice which yields the question as to which aspect of practice SLTs considered to be the act of diagnosis. When talking about diagnosis, there was extensive focus on the point of delivery of the diagnostic term to families, which suggests that this was a key part of the process. SLTs rarely discussed diagnoses with children, and it was generally considered that this was a sensitive issue and should be a parent-led endeavour.

It was possible to identify some emergent patterns related to the terminology used as part of the diagnostic approach. Many participants were reticent to use specific terms with a formal definition, for example, "DLD" or "phonological disorder". The delineation between specific and broad terms (such as SLCN) was also commented on by Dockrell and Lindsay (2001), finding that teachers were more likely than SLTs to use terms with a broader definition. SLTs in the current study perceived specific terms to be more closely associated with disadvantages of diagnoses, including poor public understanding, medical connotations, complex definitions, increased parental fear and deterministic thinking, which mirrors issues discussed in previous literature (e.g. Bishop, 2017; Walsh, 2005).

To avoid such disadvantages, participants described either avoiding the disclosure of diagnoses or implementing alternative strategies. Alternative strategies included the use of a colloquial term e.g. “word finding difficulties” or “bumpy talking”, a broad term e.g. “SLCN”, or providing an individualised description of the client’s needs. Broad and colloquial terms are not formal diagnoses in themselves, but this study has identified that some SLTs use them to serve similar purposes. Additionally, many interviewees reported providing individualised descriptions of diagnostic characteristics to families instead of a specific term, by listing features and providing functional examples. Both the use of broad terms and individualised descriptions are similar to a dimensional approach to diagnosis, which is prevalent across education literature (e.g. Lauchlan and Boyle, 2007; Sun and Wallach, 2014). This is perhaps a surprising finding given previous evidence that speech and language therapy research implements a medical model approach that is associated with categorical diagnoses (Gallagher et al., 2019).

The needs of families was a strong organising theme in the qualitative findings, reflecting a strong influence of *interpersonal social relations* on the diagnostic approach. Participants were more inclined to use specific terms if there were tangible benefits for clients, such as access to provision, support networks and information. Having a term that is widely recognised was considered to be beneficial for families, which is congruent with the views of parents featured in previous research (Howie-Davies and McKenzie, 2007; Stroebel and Swanepoel, 2014). However, many interviewees reported using broad or colloquial terms with families due to the perceived disadvantages associated with using specific terms. This contrasts with much of the research conducted with parents, which has shown that parents find colloquial terms less helpful than specific terms for accessing support and intervention (Gillman et al., 2000; Howie-Davies and McKenzie, 2007) and understanding their child's needs (Stroebel and Swanepoel, 2014). In relation to paediatric language diagnoses, one study revealed a parental preference for specific terms provided in addition to descriptions (Betz and Steigerwald, 2018). Mothers interviewed by Ash et al. (2020) were generally frustrated by vague information about their child's diagnosis provided by SLTs and questioned the extent that the SLT understood the needs of their child. This apparent discrepancy between the views of SLTs and parents is a significant finding if SLTs are to conduct diagnosis in a way that benefits clients.

Most participants described individualising the approach with each client, particularly with regard to the timing that a diagnosis was introduced. It was recognised that receiving a diagnosis could evoke a strong emotional response. Some described this as a "journey" for families and would delay the introduction of the diagnosis or use "softer" terms in order to be sensitive to their needs. This highlights an area that is possibly contributing to low terminological consistency. Many considered that diagnoses were not necessary for all clients and their families, and used clinical judgement to determine which clients would benefit from having a diagnosis. The family's readiness for diagnosis and perception of their understanding of terminology had a significant impact on the judgement about giving a diagnosis. In contrast, when parents were actively seeking a diagnosis, SLTs were more willing to use specific terms. This has significant implications if clients are receiving different terms based on the perceived needs of families, as less specific terms may reduce clients' access to evidence based provision (Macdonald, 2009; Toth and Siegel, 1994).

Overall, participants reported very low confidence in making diagnoses, despite being confident in other areas of practice. Issues that contributed to low confidence included uncertainty about the evidence base, absence of clear professional guidelines and the perceived consequences of making a wrong diagnosis. As a result of low confidence, participants were less likely to use a specific term, as there are no set criteria associated with colloquial and broad terms. This will be addressed with the other issues raised about the diagnostic approach in the discussion of implications for practice presented in Chapter 8.

### 7.2.2 Core Issues

This study highlighted several issues that appeared to underpin the ways that participants conducted diagnosis in practice. The issues discussed are not simple cause and effect mechanisms on the diagnostic approach but can be considered as interacting and sometimes competing forces that result in emergent patterns. As is typical within open systems, the elements often fluctuated and were experienced in different ways by participants. Most either manifested as barriers or supportive factors that influenced participants in their use of diagnosis in practice.

#### *7.2.2.1 Misalignment of Diagnosis in a Non-Medical Profession*

In Chapter 6, the organising relationship between qualitative themes, SLTs do diagnosis differently, revealed quandaries experienced by interviewees when making diagnoses, particularly working within a largely educational profession. There was a commonly held view that diagnostic processes do not directly translate into speech and language therapy practice. It has been suggested that the medical model has persisted in speech and language therapy since the conjoining of the arts and science bases of the profession in 1945 (Leahy and Supple, 2002), despite an increasing shift towards education in the role of the SLT (Supple and Söderpalm, 2010). The combined and often contrastive influences of both fields appeared to complicate the diagnostic practice of participants.

The extent that diagnosis was embedded in systems that participants worked in appeared to impact their approach to diagnosis. Participants in NHS settings reported that diagnosis was part of service procedures, which typically operated with a medical model staged process of assessment, diagnosis, and intervention. Although some were reticent to diagnose due to perceived disadvantages, in NHS systems diagnosis was often a prerequisite for clients to access provision. Participants in settings where clients were able to access provision without a diagnosis, typically mainstream schools and private settings, often had more flexibility and some only used diagnosis when contributing to a formal report such as an EHCP. Across education literature, the disadvantages of diagnoses and the limitations of specific categories have been a significant focus (Bishop, 2014; Ho, 2004; Lauchlan and Boyle, 2007). In the US, the IDEA framework governs the distribution of specialist educational resources and operates akin to a dimensional approach (Sun and Wallach, 2014). Given the limitations of identifying categories in practice, Duchan (2019) suggested that clients would benefit if SLTs adopted a similar model, with emphasis shifted towards individualised support recommendations.

Some interviewees questioned the merits of using diagnosis with their client group. Challenges included the fluctuation in the presentation of needs over time, and a high prevalence of clients also meeting criteria of other diagnoses, such as autism. Participants reported that it was typical to experience uncertainty about a diagnosis, resulting in reticence to use terminology associated with specific criteria. Some considered that giving a diagnosis when clients did not meet all criteria or had other diagnoses, was not necessarily ethical or beneficial. Whilst this problem has been recognised in research, Snowling (2012) argued that diagnostic categories are necessary to facilitate the development of a higher quality evidence base for intervention, which is ultimately to the clients' benefit. Schuele and Hadley (1999) suggested that clinicians need to accept a "tolerance for ambiguity" in the diagnostic process. However, when distinct categories have not been clearly defined in theory, it has also been argued that identifying a single diagnosis is challenging in practice (Patterson, 2005; Schuele and Hadley, 1999). The findings of the current study do not necessarily show that SLTs have a preference for a dimensional approach. However, it is apparent that the limitations associated with diagnostic categories have not yet been resolved sufficiently for confident application in practice.

#### 7.2.2.2 Barriers in the System

Interviewees in this study discussed three main barriers to the diagnostic process, which related to workplace constraints: insufficient resources, limited time with clients and restrictions of service capacity. Participants discussed the importance of assessment in the diagnostic process. Some reported lifting terms from the CELF and the DEAP assessment tools, as test scores provided evidence to support the diagnosis. However, many did not have good access to up-to-date or appropriate assessments within their workplace. Without results that could support a specific diagnosis, it was common for participants to use alternative terminology. Research has shown that the majority of SLTs use familiarity to guide their selection of assessment tools, rather than an evaluation of psychometric properties (Betz et al., 2013; Fulcher-Rood et al., 2018), which raised concerns regarding their knowledge of the evidence base. There was no clear indication in the current study to suggest that SLTs are unaware of the evidence base surrounding assessments, but many interviewees reported that using standardised tools was generally unfeasible in practice. This was largely due to the amount of time required, which has also been reported in previous research (Betz et al., 2013; Dollaghan, 2004a; Limbrick et al., 2013). As a result of the limited time with clients and insufficient access to tools in practice, some prioritised intervention over assessment and diagnosis. It has been previously suggested

SLTs may not prioritise the process of establishing a diagnosis in practice due to a lack of emphasis on aetiology (Schuele and Hadley, 1999). The current study indicates that it is not the attitudes of clinicians, but limited access to resources that drives the prioritisation of clinical time, thus creating a barrier to making diagnoses.

Many participants also discussed the problem of insufficient time in relation to the opportunity to discuss the full implications with parents. A qualitative study of five SLTs working with autism also found that the conversation around diagnosis was important to SLTs in supporting the emotional needs of parents (Cameron and Muskett, 2014). Limited contact time was the main barrier in the current study, causing avoidance of diagnosis. Participants in independent practice commented on having more time to diagnose, due to more autonomous management of their caseload than SLTs in externally managed settings. Loan-Clarke et al. (2010) found that SLTs in the NHS have less clinical time to work with clients, which was perceived to limit their ability to provide a good standard of care. This suggests that clear guidance is required for the management of clinical time in the delivery of diagnosis, and that caseload distribution in the UK requires urgent review.

Service capacity was also a barrier to some interviewees, particularly in areas of high diagnostic prevalence. Participants reported that services developed criteria for provision independently, which did not necessarily align with RCSLT recommendations or the wider evidence base. Therefore some clients meeting diagnostic criteria would not receive any intervention. There was a perceived need for guidance to direct clinical action in such scenarios, and there were mixed views about whether it was ethical to give a diagnosis to families without intervention. Some participants felt that diagnoses empowered families to advocate for provision when it was not available, whilst others considered it unfair to the family. This also calls into question the apparent acceptance of service capacity as a means to determine whether a diagnosis is given. Congruent with evidence identified across the literature regarding the views of SLTs (Fulcher-Rood et al., 2019; Selin et al., 2019; Thomas et al., 2019), this study indicates that the profession openly perceives capacity to treat as a legitimate means to determine whether to give a diagnosis. Service capacity is not consistent across the UK (Hancock, 2019) and, according to participants in this study, often not derived from research outcomes. This not only has consequences for diagnostic consistency, but also parity across clients.

#### *7.2.2.3 Stigmatisation of Diagnoses*

Generally, there was a perception that diagnostic terms hold inherently negative connotations, and awareness of the negative effects of diagnosis permeated the qualitative data. Participants described the stigmatising effects of diagnosis as “labelling” or “putting [a child] into a box”. The main concerns pertained to an awareness of power$_2$ relations (Bhaskar, 1975), which are oppressive social values associated with neutral concepts (such as a diagnosis). Previous research has shown that adults make negative assumptions about overall intelligence if a child is known to have speech and/or language difficulties (Rice et al., 1993). This can result in poorer academic outcomes, a phenomenon termed “deterministic thinking” (Gallagher et al., 2019). However, Rice et al. (1993) suggested that a diagnosis may help families and professionals in challenging preconceived social biases. Ash et al. (2020) found that diagnoses were useful to parents to gain an accurate understanding of their child’s needs. Several interviewees in the current study also recognised that the receipt of diagnosis had assisted children and families to understand their difficulties, and foster connections with support such as the RADLD campaign (Bishop et al., 2012).

Interviewees described modifying their delivery in order to support the emotional needs of families. Terms with connotations of disability, particularly “disorder”, were thought to be more stigmatising, and many participants were reluctant to use them. Across research, the stigmatising impact of terminology has generated prominent debate, with mixed preferences amongst individuals, particularly with regard to person-first language (Louis, 1999; Sinclair, 2013). In the case of autism, the neurodiversity movement eschews negative language such as “disorder”, “deficit” and “impairment”

(Nicolaidis, 2012), yet not all people with a diagnosis of autism subscribe to this view (Kenny et al., 2016). Similar to the findings of the current study, it has been found that SLTs avoid medicalised diagnostic terms when discussing concerns regarding autism with parents (Cameron and Muskett, 2014). The social stigma attached to developmental diagnoses is a recognised source of parental concern (Rice et al., 1993), however, Ash et al. (2020) argued that SLTs withholding formal diagnostic information causes relatively more psychological harm to parents. There is limited discussion within the literature that focuses on family experiences of diagnosis in speech and language therapy. The current study indicates that the views of SLTs regarding the extent that terminology is stigmatising are disjointed with the perspectives of families in wider research, which should be pursued in future work.

A few participants discussed a perception that the level of stigma associated with diagnoses varied across cultures, and were mindful of this in their approach. This is an important area to consider if SLTs are not providing specific terms to families who are fearful of stigmatising effects. Some research suggests that although stigma associated with educational needs is prevalent across most ethnic groups, it may be increased amongst ethnic minorities (Scior et al., 2013). In order to practice sensitively, interviewees reported introducing diagnosis gradually or used alternative terms in an attempt to lessen any negative impacts. However, this may have unintended detrimental consequences, particularly delays in access to support. Mandell et al. (2002) found that in the US, African American children were less likely to receive a diagnosis of autism than White peers, despite evidence demonstrating that associated behaviours are generally consistent across cultures (Norbury and Sparks, 2013). On average, autism diagnoses were received by African American children 18 months later than White children, despite no differences in age at the time of initial referral, thus delaying access to support. In the UK, semi-structured interviews with 26 South Asian families conducted by Hatton et al. (2003) revealed more delays in diagnoses of intellectual disabilities compared to studies involving White families (e.g. Sloper and Turner, 1993). Some children were not diagnosed until they had received a placement in a specialist educational setting, which was deemed unacceptable to families. Similar to Betz and Steigerwald (2018), Hatton et al. (2003) also reported that diagnostic terminology used was generally not considered stigmatising by families. There is not yet clear evidence that pertains to the interaction between minority groups and stigma for speech, language and fluency diagnoses. Without clear guidance in this area, SLTs reported using clinical judgement to determine their approach. As this is largely based on experience in practice and knowledge of theory, which is sparse, this particular area demands a clear evidence based approach, in order to avoid consequential inequalities.

#### *7.2.2.4 Clinical Judgement and the Evidence Base*

To determine decisions about disclosing diagnoses to families, interviewees relied on clinical judgement acquired from practice and drew on personal views and experiences of diagnosis. Many participants recognised the parental desire for diagnosis in their personal lives, providing insight into how *inner being* (Bhaskar, 1975) informed practice. Participants described their own positive experiences of receiving a diagnosis, including a sense of empowerment and better understanding and recognising this need in clients often increased their inclination to diagnose. Most reported that their diagnostic skills were acquired through developing clinical judgement over time in practice. Surveys conducted with SLTs in the US indicated that clinical judgement is considered fundamental to the diagnostic process (Betz et al., 2013; Selin et al., 2019), and the current study provides new qualitative insight into its application in UK practice. Whilst clinical judgement was considered necessary, participants also recognised a lack of guidance for a standardised approach, resulting in a need to develop diagnostic strategies independently. Participants expressed a need for a core reference point to guide diagnostic decisions, especially as many were not able to conduct full assessments. The impact of insufficient guidelines for the diagnosis of autism has recently come to light. Hayes et al. (2018) systematically reviewed the 21 guidelines that outline diagnostic procedures for autism in the UK. Highly diverse recommendations were found in relation to diagnostic procedures, and most acknowledged that contextual differences add complexity to the process. However, few provided clear recommendations to manage such factors for best diagnostic outcomes. Hayes et al. (2018) argued that precise guidance is required to support clinicians in managing nuanced social factors in order to facilitate consistency across practice.

Interviewees expressed a need for certainty in making diagnoses and the concept of ambiguity was problematic, particularly when evidence was required for legal reports. Terms that indicate persistence into adulthood were particularly concerning, given the challenges of predicting long-term prognoses. Previous research has shown that it is common for clinicians to take a cautious approach to long term diagnoses such as autism (Cameron and Muskett, 2014), and it is typical to conduct periods of "diagnostic therapy" without assigning labels, to avoid misdiagnosis (Goin-Kochel et al., 2006). Participants were hesitant to diagnose young children with DLD due to the changing presentation of needs over time. Whilst uncertainty about identifying diagnoses in very young children may deter SLTs from using specific terms, Schuele and Hadley (1999) argued that there is sufficient evidence about trajectories to make language diagnoses when children are aged 4–5 years. Interviewees were also keen to avoid the parental emotional burden of changing a diagnosis. Schuele and Hadley (1999) posited that parents are familiar with risk models, and argued that challenges in predicting trajectories should therefore not deter SLTs from making diagnoses.

Many interviewees were not confident in their interpretation of diagnostic criteria and research outcomes, as both were often deemed not sufficiently relevant for the diversity of the client group. In particular, several discussed difficulty interpreting and transferring recommendations from the CATALISE project into practice, and some felt that a dearth of guidance had caused a period of enhanced confusion. The recommendation that functional assessment is used in the diagnosis of DLD was considered to be a particularly problematic criterion, as, without clear quantitative boundaries, participants were uncertain about accruing evidence for the diagnosis. This issue was pronounced when clients had complex needs and diagnostic boundaries were unclear, particularly with regard to DLD and autism. This demonstrates the practical challenges of a categorical approach to diagnosis. In addition, there were mixed interpretations of the age that DLD could be diagnosed across interviewees. Some considered that the diagnosis was not recommended until age 5, and the implementation of this criterion also varied across services. This confusion may be related to the briefing paper following CATALISE, in which RCSLT (2017d) suggested that "language difficulties with low risk factors in under 5s" do not fall within the DLD diagnosis.

Interviewees discussed the dilemma of being research literate, yet struggling to apply research outcomes in practice, as the needs of clients were highly diverse and often deviated from research criteria. Several articles have identified incongruence between research and practice in speech and language therapy, which largely pertains to the difference between strict research criteria and the complex reality of the needs of clients in practice (Campbell and Halbert, 2002; Fey and Johnson, 1998; Olswang and Prelock, 2015; Wilcox et al., 1998). The current study highlights that there is a need for clear unified guidance to support clinicians with the application of criteria, which may foster more consistent implementation. Eadie (2005) emphasised the need for SLTs to be confident in understanding and applying research, as they must also be able to translate evidence to families. For most participants, uncertainty about the CATALISE recommendations was ongoing at the time of the interview, and it was a commonly held view that RCSLT and universities had a role to play in providing support.

#### *7.2.2.5 Inaccessible Terms*

This study found that, generally, SLTs perceive the diagnostic terminology used within the profession to be technical and consequently inaccessible to parents and other professionals. The use of alternative terms was an organising relationship across the qualitative data, and the majority of participants reported using colloquial terminology in order to avoid "jargon". This finding may be significant with regard to client outcomes, given previous evidence that the terminology used in diagnosis can affect patients' treatment choices and perception of their condition (Kempe et al., 2013; Weber and Edwards, 2010). In particular, less medicalised terminology has been shown to be associated with less invasive treatment (Nickel et al., 2018). Some interviewees reported that official documentation was the only context in which specific terminology was needed. However, mothers in the study conducted by Ash et al. (2020) often did not understand diagnostic information in reports written by their child's SLT. Most did not receive a diagnostic term in face-to-face interactions, and it was stated that difficulties understanding reports reduced their ability to advocate for their child's needs. Research with families indicates that most prefer to receive formal diagnostic terms with an accompanying explanation (Betz and Steigerwald, 2018; Stroebel and Swanepoel, 2014). The use of technical terms to convey diagnoses to parents has been explored in interviews with 30 parents regarding the receipt of neonatal diagnoses (Davies et al., 2003). Whilst initially, terms such as cerebral palsy were described as "alien words", unknown terms did not induce a negative experience of diagnosis, and parents focused more on the clinician's attitude and sensitivity. Participants in the current study viewed that the avoidance of jargon made their diagnoses more accessible, which suggests that a better understanding of parents' needs with regard to receiving diagnostic information is needed.

Most interviewees reported using their judgement of the background knowledge of parents and other professionals to guide their choice of terms. It has been widely suggested that the complexity of concepts in speech and language therapy has prevented terms from permeating the public lexicon, resulting in low public awareness (Eadie, 2005; Kamhi, 2004). Some participants considered that diagnoses are only useful to families if terms could be used to access support and information, but that most are not sufficiently well known to yield such benefits. If terms are rarely used, they arguably remain jargonistic. Eadie (2005) recognised that SLTs require training in the delivery of diagnostic information, highlighting the challenge of translating complex academic terminology to parents.

The complexity of terms was also a barrier for participants in communicating diagnostic information, and in particular, teachers were thought to have very poor awareness. Previous research has shown that teachers and SLTs define specific diagnostic terms differently, but have a closer shared definition of broad terms such as SLCN (Dockrell et al., 2017). This may be due to a preference for broad terms in education (Gallagher et al., 2019), or lack of exposure if SLTs avoid using specific terms with teachers in practice, as indicated by the current study. However, the use of colloquial terms to avoid jargon arguably further reduces the potential for raising public awareness of diagnostic terms. A few participants suggested that the solution to raising awareness may lie with SLTs using terms that are not currently well known, and supporting families in campaigning efforts.

#### *7.2.2.6 Preregistration Training and CPD*

Generally, interviewees considered the training for diagnostic practice to be insufficient, both at university level and opportunities for CPD. This contributed to low confidence amongst NQPs who had less practical experience of working with clients and were therefore reliant on knowledge of theory. A similar finding was reported in relation to the confidence of US-based SLTs working with autism, comparing those who qualified prior to 2006 with those who had graduated in the years since. Despite less coursework and fewer clinical opportunities to work with clients during preregistration training, those who qualified before 2006 were more confident in assessment, diagnosis and intervention (Plumb and Plexico, 2013). Similarly, in a survey of 599 US-based SLTs, 62.5% reported confidence practising in the area of paediatric written language disorders, despite minimal coverage in initial training (Blood et al., 2010). These outcomes suggest that confidence is attained in practice, which aligns with the finding of the current study that experience was deemed more useful than knowledge of theory in diagnostic practice. Whilst this indicates that it is possible to attain skills from experience, confidence was low across the majority of interviewees suggesting that further support is needed. The lack of diagnostic training for SLTs has previously been raised by Eadie (2005), who suggested that communicating effectively with families around diagnosis needs to be explicitly taught.

Interviewees reported that their clients often have complex and multifaceted needs that are challenging to differentially diagnose, and therefore some prioritised commencing intervention over full assessment and diagnostic procedures. Schuele and Hadley (1999) posited that this may be due to emphasis on intervention over aetiology during clinical training. The current study does not contradict that point - but highlights a clear call from SLTs for the provision of more training with regard to diagnostic procedures. Interviewees felt that the importance of incorporating research had been emphasised during university training, but reported gaps in skills necessary to interpret and apply evidence pertaining to diagnosis. In a UK survey, Pagnamenta and Joffe (2018) found that five out of 14 lecturers on preregistration courses perceived graduate SLTs to be “not at all” confident in research awareness. Additionally, the number of hours of research teaching was strongly positively correlated with perceptions of confidence in research awareness. Whilst the onus is often placed on SLTs to “make time” to engage with research (RCSLT, 2014), Fey and Johnson (1998) recognised that professional bodies such as RCSLT have an integral role to play in improving channels of communication between research and practice. A survey of 137 Australian SLTs revealed that more recent graduates engaged in more evidence based practice, suggesting the significance of preregistration training (Finch et al., 2013). The current study demonstrates an ongoing need for clinical guidance to outline diagnostic processes, and to support SLTs with the implementation of new criteria and evidence.

Interviewees also reported that opportunities for Continued Professional Development (CPD) for making diagnosis were sparse. In particular, there was a recognised absence of support following the introduction of DLD recommendations, which caused confusion and uncertainty in practice. One participant reported that during this time, SLTs relied on placement supervisees to transfer information from universities. This study has shown that SLTs are aware of an ongoing need for training throughout practice as the evidence base evolves, as previously acknowledged by Kamhi (1995). Networking with other SLTs was considered to increase confidence, and CENs provided opportunities to discuss difficult cases and share knowledge of research. There has been limited research into the contribution of professional groups such as CENs and regional Hubs in speech and language therapy, but a systematic review of professional networking indicates that collaborative groups can facilitate information sharing and may improve professional cohesiveness (Cunningham et al., 2012). Findings of the review indicated that networks become vulnerable when there is over-reliance on individuals to coordinate group activity, therefore it is recommended that organisations invest to establish and maintain networks to yield full benefits.

### 7.2.3 Summary of Diagnostic Practice

In seeking to reveal and understand the diagnostic processes of SLTs in the UK, it was not possible to identify one approach to diagnosis, but several emergent patterns were recognised. Some challenges appear unique to the practice of SLTs, including the application of a medical model concept in a broadly educationally oriented profession. It has been shown that diagnosis, and by extension terminology, is impacted by social, practical and theoretical issues which are unique to the complexity of clinical environments. Terminology has been recognised to have different purposes depending on the context (Walsh, 2005), and this study has identified the nature of divergence in its application. Some of the issues pertained to the complexity in the presentation of speech, language and fluency. The challenges of identifying a single diagnostic category contributed to hesitancy in ascribing specific terms. This was further impacted by practical limitations, such as access to extensive assessments and the prioritisation of intervention during clinical time with clients. In addition, some participants felt that diagnosis was dictated by service capacity. Some only gave specific diagnoses when required for a client to access provision, and this is known to vary across services.

The social aspects of diagnosis were highly significant to participants, which were recognised to be highly diverse across clients and settings. Participants considered that different values were attributed to diagnosis across families and professionals, and many modified their approach to meet the perceived needs of others. Some participants, particularly those who had personal experiences of receiving diagnoses, empathised with families seeking an explanation of their child's needs, and in those cases were more inclined to share a diagnosis. This view aligned most closely with findings from research that has investigated family reactions to diagnosis (e.g. Hatton et al., 2003; Howie-Davies and McKenzie, 2007; Stroebel and Swanepoel, 2014; Ash et al., 2020). However, there were conflicting views across participants about whether to use diagnosis, with many considering some terms, particularly "disorder" to be highly stigmatising. Consequently, it was typical for participants to avoid giving these diagnoses, or to use more colloquial terms. In recognition of different values attributed to diagnosis and varying levels of understanding, SLTs used clinical judgement to determine which families received diagnoses and which terms were used. Often, using broad or colloquial terms was viewed as a means to practice inclusively. This highlights an important distinction between what some SLTs consider to be inclusive practice and the voices of families in research.

The SLTs in this study were concerned about their engagement with theory. Many described a lack of guidance, which was problematic when interpreting and implementing diagnostic criteria. Participants discussed a need to develop independent approaches to diagnosis in the absence of a singular reference point and observed that this also occurs at a service level. As a result, criteria and diagnostic practice were divergent, which also explains why it was not possible to identify one approach taken by SLTs. This is particularly significant if diagnosis impacts access to support and individuals' understanding of their needs. Ash et al. (2020) posited that the lack of formal diagnostic information provided by SLTs causes psychological harm to parents. This calls for clear evidence based guidelines for a core diagnostic approach that can be applied across the profession to ensure equitable practice.

# CHAPTER 8: REFLECTIONS FOR PRACTICE AND CONCLUSIONS

Explicitly relating research findings to practice is a principal element of DCR research. This chapter presents two figures that were constructed to reflect the current practice of SLTs as identified by this study, and the impact this has on a wider scale. The factors that influence SLTs' use or avoidance of specific diagnostic terms are outlined in a model of practice. Subsequently, a Rubik's cube is presented as a metaphor to represent the impact of individualising terminology in response to varying social contexts on overall consistency. The findings are then considered in reference to implications for the profession, and recommendations are made for clinical practice and future research in this field. One of the main themes of this research was the influence of social contexts on terminology use and the clinical diagnostic approach. This indicates that the nature of problems with inconsistency in research that have been identified in previous literature (e.g. Bishop, 2014; 2017; Reilly et al., 2014a) may not be extrapolated to clinical practice. This chapter discusses the extent that DCR informed and supported the development of this work, and its potential value for speech and language therapy research is then discussed. The original contributions to research are also outlined, to indicate the new knowledge that has been produced by this work, and contextualised within an appraisal of its associated strengths and limitations. Finally, the totality of the project is concluded with my own reflections on my role within the research, and impressions for continuing work in this area.

## 8.1 Representations of Current Practice

Researchers adopting a DCR lens are encouraged to formulate detailed observations of social phenomena from findings, to increase their translatability. This is described in the third stage of the MELD framework - *totality* (Alderson, 2013), with the aim of articulating possible directions for change informed by the evidence obtained. This section presents two descriptive representations of practice that synthesise the main findings and illustrate the factors that interact to produce patterns in the diagnostic practice of SLTs.

Figure 8-1 is a tiered synthesis of the factors that interact and have an effect on the likelihood that an SLT will make a diagnosis using a term that is "specific" in nature or take an alternative approach. Figure 8-2 is a visual metaphor to act as a typology for the real-world impact of diagnostic practice and terminology usage, illustrating the broader social impact of the issues identified. The use of metaphors can be useful in DCR research to portray complex social phenomena (Lopez, 2005), and have been shown to be useful for clinicians in explaining issues from professional practice in cognate health fields, such as in medicine (Coulehan, 2003; Rosenman, 2008) and nurse education (Zimmerman and Phillips, 2000). The metaphor of a Rubik's cube was developed to tangibly represent the abstract effects of terminology use across multiple social contexts.

### 8.1.1 Key Factors Influencing the Use and Specificity of Diagnosis

The findings of this work have shown that the diagnostic approach of SLTs is highly related to their use of terminology. The demands of the social context inform whether an SLT will use a term that is specific in nature (e.g. DLD or phonological disorder) or an alternative strategy to communicate the needs of the client (e.g. description, broader terms, or not using diagnosis). This study has identified both motivating factors and barriers to the use of specific diagnostic terms in practice. These can be synthesised as a descriptive model of practice. The model shown in Figure 8-1 shows underpinning theoretical, practical and social issues that were found to interact to produce emergent patterns of SLTs' terminology use.

When any one of the factors in each category was more amplified, shown on the right-hand side of the model, this typically supported the use of specific terms. Barriers to the use of specific terms presented when factors were less intense, as shown on the left-hand side.

| BARRIERS TO THE USE OF SPECIFIC TERMS<br>(MORE LIKELY TO USE **ALTERNATIVE** APPROACH) | FACILITATORS TO USING **SPECIFIC** TERMS |
|---|---|
| **SLT Related Factors**<br>Concerns about using jargon<br>Low confidence making diagnoses<br>Limited experience<br>Lack of support systems | **SLT Related Factors**<br>Clear benefits of diagnosis<br>Confidence making diagnoses<br>Extensive experience in practice<br>Access to peer-support<br>Openness to changing the diagnosis |
| **Practice-Based Issues**<br>Poor access to assessment tools<br>Insufficient time with clients<br>Inadequate capacity to commence intervention<br>Clients' needs not meeting service criteria | **Practice-Based Issues**<br>Good access to assessment tools<br>Sufficient time with clients<br>Caseload capacity<br>Alignment of clients' needs with service criteria |
| **Client Circumstances**<br>Low understanding of diagnostic concepts<br>Parental concerns about diagnosis<br>High surrounding social stigma | **Client Circumstances**<br>Good understanding of terms and concepts<br>Parental readiness for diagnosis<br>Perceived benefits of diagnosis for the client |

*Figure 8-1: Model to show factors that influence the specificity of terms used by SLTs*

The first category, shown in the top tier, is comprised of factors that related directly to the SLT making the diagnosis. Analysis of the qualitative data revealed that SLTs were keen to use specific diagnostic terms when they were associated with tangible benefits. This included associated drives to raise awareness, such as the RADLD campaign for DLD and clear links with sources of online information. Such benefits were a counterbalance to the SLTs' drive to avoid terms perceived as "jargon". Motivating factors for SLTs to use specific terminology were also related to individual confidence and experience in making diagnoses. Experience in practice supported participants to recognise the clinical presentation of diagnostic features, which was important given the heterogeneity of client groups. The availability of support systems (such as networking and supervision) contributed to the use of specific terms, as SLTs were able to discuss issues, seek resolutions to queries and check understanding with peers. This reportedly increased confidence in diagnostic decisions. Participants reported avoiding the use of specific terms when there was concern that a diagnosis might be challenged or need to be changed. There was extensive discussion of the risk involved in disclosing a diagnosis, with one participant stating that any terms used needed sufficient evidence to “stand in a court of law”.

The second category of factors was related to practice-based issues. In interviews, participants discussed several system barriers which influenced their use of specific terms. Often the main purpose of a specific diagnosis was considered to be access to provision. In some services, specific diagnostic terms were a requisite for clients to access provision, such as NHS care pathways, and some SLTs used specific terms solely for this purpose. Where services had limited caseload capacity, SLTs had to decide whether to share diagnoses with clients that met diagnostic but not service criteria. The potential drawbacks associated with diagnoses made this a complex element of the decision. Additionally, access to a broad range of up to date assessment tools was limited for many participants, and this challenged reduced the availability of evidence to support the use of specific terms. Several elements of making a specific diagnosis also required clinical time. Conducting full assessments and discussing the diagnosis with families were problematic when there was limited time to do so. Participants reported the need to prioritise functional intervention over conducting a full diagnostic process. SLTs in private settings (such as clients’ homes), often had sufficient with clients, yet giving a diagnosis for the purpose of accessing intervention was usually unnecessary. Therefore, the conflict between the need for diagnosis and the disadvantages associated with specific terms was also present in these settings.

The third category relates to the circumstances of the client. Often the SLTs’ perception of the needs of parents factored into the decision regarding the most appropriate terminology to use for the diagnosis. The need to use different terminology depending on the social context was a prominent issue in the qualitative data. SLTs discussed the importance of avoiding the use of technical terms when understanding was low, in order to be accessible. It was widely perceived that more medically aligned diagnostic terms such as “disorder evoked more undesirable outcomes such as stigma and parental fear. SLTs would instead use more colloquial terms to avoid this; for example “bumpy talking” was used to indicate a fluency related diagnosis. Families expressing openness to receive a diagnosis was a motivating factor for SLTs to use specific terms. In contrast, where an SLT felt there might be increased resistance or fear (for example due to cultural factors), the use of specific diagnoses was often avoided.

Most participants in this study reported numerous benefits to the use of specific terms. It is also important to note that, in addition to obstructive barriers, the findings of the current study also suggest that SLTs perceive there to be some genuine disadvantages that are inherently associated with specific terms. Therefore, their use may not be appropriate in all cases. Examples included environments where diagnoses are highly stigmatised, clients with multiple needs and other possible diagnoses and parents who express fear, resistance or have significant difficulty comprehending technical terms. This creates the need for a clinical decision to be taken about how to disclose a diagnosis.

### 8.1.2 The Pursuit of Terminological Consistency: The Rubik’s Cube Metaphor

The survey showed that many terms are used by SLTs in clinical practice to describe clients with similar needs. Interviews revealed that consistency in terminology is a shared goal with recognised benefits for clients, yet the need to individualise the diagnostic approach to meet the needs of clients impedes the consistent use of terminology. As shown in Figure 8-1, decisions regarding terminology use were largely based on clinician-related factors, service-related factors, or the perceived needs of parents and other professionals. The findings suggest that SLTs develop independent strategies for diagnostic practice, which does not align with the overarching goal across the profession of terminological consistency. The flux in these factors thereby contributes to the variation in terminology. The Rubik's cube in Figure 8-2 has been devised to describe the impact of this approach on the terminology usage of SLTs across the UK. The numbers in the diagram correspond with the description that follows:

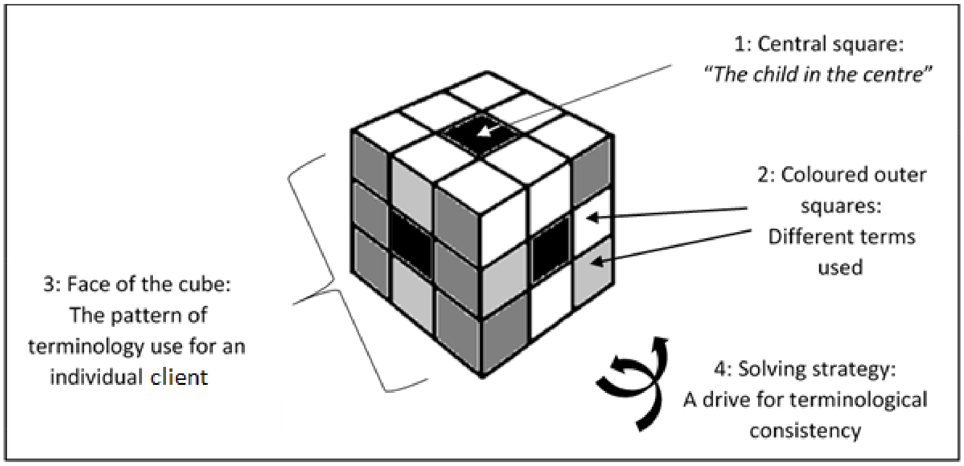


*Figure 8-2: Rubik's cube to metaphorically demonstrate the patterns of terminology use and components of a solving strategy*

**1:** The central square of each face represents the client that receives a diagnosis. All participants discussed clients and their families as being central to their practice, and several reported that making adaptations to meet their social and emotional needs was one of the most important aspects of making a diagnosis.

**2:** Different colours of squares represent a different term used for a single client.

**3:** Squares on each face represent the terms used by an SLT in various interactions. Different shades represent different terms used in each interaction, such as in a report, with a teacher, in a multidisciplinary team, or with a parent. The shades around the central square (the client) illustrate the pattern of the terminology used for each client. When the cube is unsolved, there are multiple colours on a single face of the cube – representing terminological inconsistency. Although one face may have all the same coloured squares (e.g. the top face), demonstrating an SLT using the same term across all contexts, the puzzle is not complete unless all clinicians are using terminology consistently.

**4:** Akin to understanding the mechanisms of the cube, learning the social factors underpinning SLTs' use of diagnosis are essential to influencing overall outcomes. Just as solving the puzzle requires working around the central square, it is important for SLTs to focus on the needs of the client. In doing so, it is common for SLTs to take an individual approach to diagnosis by adjusting their use of terms. Currently, there is no cohesive strategy across the profession for determining the best terminology for use in diagnosis. The absence of a strategy increases the reliance on professional judgement and views on diagnoses. This does not align with overall professional consistency, just as randomly turning the cube is unlikely to solve it. This study has shown that SLTs need a reference point, akin to puzzle instructions, in the form of training and clinically focused guidelines that incorporate practical challenges.

The metaphor of the Rubik's cube is intended to show the impact of clinicians varying their terminology depending on the context (e.g. discussions with a parent or professional, or completing a report). However, the notion of "solving the puzzle" is a complex issue depending on the desired outcome. Current literature highlights an impetus to achieve the benefits associated with terminological consistency such as increased public awareness and more effective campaigns (e.g. Bishop, 2017; IASLT Working Group, 2017; RCSLT, 2017c; Walsh, 2005). The current study indicates confounding issues to this goal within the profession. Participants described various situations in which it may not be beneficial to use a formally recognised diagnostic term, for example in the context of high stigma. Therefore, the use of colloquial or broad terms may be beneficial in individual cases. Further research is needed into this area, with views from a broad range of families and children incorporated.

The need for more evidence from families is pertinent, as individual clients are affected by the global use of terminology. The Rubik's cube metaphor indicated how each central square is impacted by the cube as a whole. If wide-scale terminological consistency is achieved, this may facilitate better public awareness (Walsh, 2005), which in turn increases the potential for research funding (Bishop, 2010b), advocacy (Kamhi, 2005), and general communication about diagnoses (Reilly et al., 2014a). However, if individuals do not receive the recognised diagnosis based on the clinical judgement of SLTs, access to positive aspects to diagnosis may be restricted for certain groups. Additionally, if SLTs are using terms idiosyncratically, the extent of consistency is reduced and thus the effectiveness of positive aspects to diagnosis for individuals is muted (Bishop, 2017).

Issues related to terminological consistency can also occur at a localised level, impacting interactions between services. SLTs communicate with multiple professionals involved in a client's care and often use different terms depending on the assumed background knowledge of others. Participants also reported that different services developed independent approaches to criteria and terminology, especially if a diagnosis was required for access to provision. Ultimately, clients and families are impacted by these broader issues, which has been a key driving force for clinicians in achieving terminological consistency (Parsons et al., 2014). Figure 8-3 depicts the relationship between terminological consistency at national and local levels and the impact on individuals:

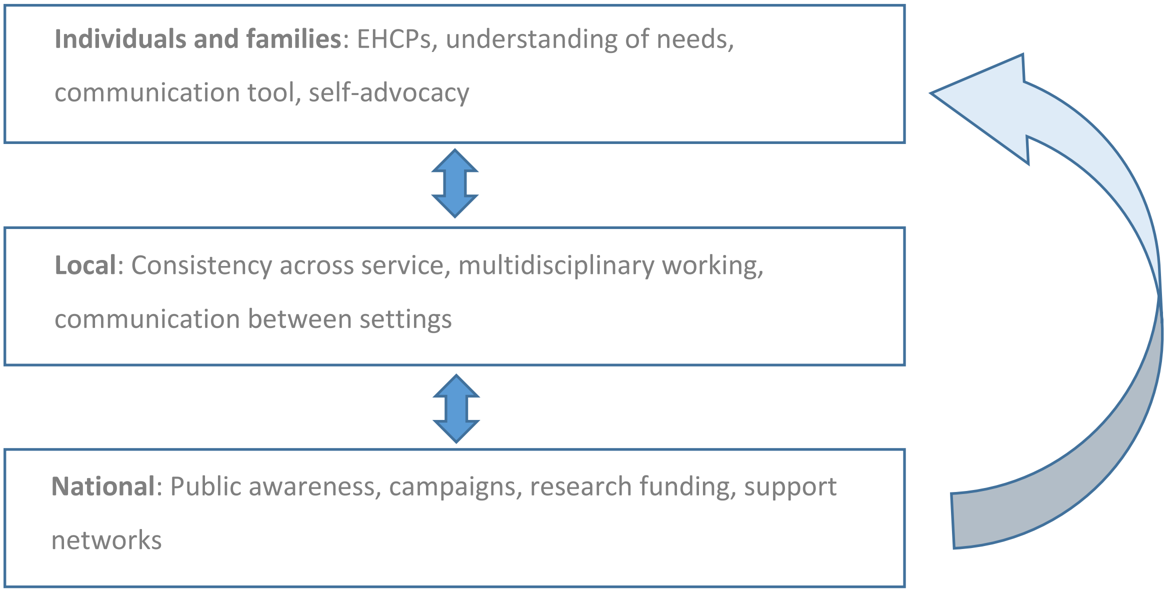


*Figure 8-3: Impact of terminological consistency at the individual, local and national level*

The identification of contributing factors to phenomena, and the appreciation of the complexity of social contexts, set realistic parameters for driving sustainable, meaningful change (Alderson, 2013). The DCR concept of MELD (see Chapter 4) demonstrates how interventions that intend to resolve problems in society must incorporate the epistemology of generative mechanisms. MELD splits the process of social change into four stages: moment, edge, level and dimension. DCR defines these concepts as (1) Moment; the status quo prior to change, (2) Edge; the intervention, (3) Level; the change process, and (4) Dimension; the longstanding after-effects. When proposed solutions to vast problems (such as terminological inconsistency) do not take into account the complex social roots of the issue occurring at the stage of Moment, it is argued that the extent of change from the intervention at Edge is limited (Alderson, 2017).

This might suggest why the CATALISE project has not yet produced the intended outcome of terminological consistency. Although a consortium of 59 professionals and parents were consulted (Bishop et al., 2016), there was limited documented investigation to appraise the interacting generative mechanisms that underlie the phenomenon of terminological inconsistency prior to implementing change. The outcome of the CATALISE project focused on recommendations for individual diagnostic practice to achieve wide-scale consistency, with limited guidance on the idiosyncratic and complex nature of practice. This study has produced an understanding of the socially rooted generative mechanisms that interact to produce terminological inconsistency in the *open systems* of clinical practice. Knowledge of these can be used by the profession to inform future strategies to increase the benefits of diagnostic terminology use that can benefit individuals, services, and campaigning efforts.

### 8.1.3 Impacts of Clinical Decision Making

The terminology used in diagnosis is currently based on each SLT's expert appraisal of the benefits and drawbacks as there is minimal evidence or clinical framework to support this decision-making process. Clinical judgement is ultimately based on the experiences and training of individual SLTs (RCSLT, 2005; Records and Weiss, 1990), which therefore leaves practice open to subjective vulnerabilities such as implicit bias (Bell and Mellor, 2009; Dawes et al., 1989). The ultimate consequence of this is that some groups of clients may be unintentionally excluded from receiving the benefits associated with having a specific diagnostic term. This study thereby suggests that evidence is needed to inform clinical judgement to ensure that the practice of SLTs is of greatest benefit to their client group, particularly in the absence of clinical guidance.

The relationship between perceptions of terminology with stigma is controversial and poorly understood (Riddick, 2009). The current study indicates that some SLTs view diagnostic terms to be stigmatising, resulting in a tendency to defer to the use of colloquial terms and the avoidance of diagnosis. Although clients' voices are largely absent from the debate, some research indicates that parents do not find colloquial terminology useful for seeking information and support for their child's needs (Ash et al., 2020; Howie-Davies and McKenzie, 2007), and there is evidence to indicate a preference for specific terms with an accompanying explanation (Betz and Steigerwald, 2018). If assumed negative consequences related to stigma prevent SLTs from giving diagnoses to some clients, this may inadvertently preclude families from accessing resources and educational material. No evidence for cultural differences in diagnostic patterns was identified within UK contexts or for the speech and language therapy profession, but there is emerging evidence of disparity in diagnostic processes, which is directly linked to access to resources (Elliott and Grigorenko, 2014; Macdonald, 2009). Research suggests that children of ethnic minorities experience longer delays in receiving developmental diagnoses and access to appropriate services (Hatton et al., 2003; Mandell et al., 2007). This study does not provide the evidence to justify specific recommendations for a professional strategy to address the social stigma of diagnosis and inequalities. It does highlight the need for future research to explore the parental perspective of diagnosis and interactions with stigma to ensure that, in striving to be culturally sensitive, the profession is not reproducing social inequalities.

There is evidence to show an overall trend of parental preference for specific terminology (Betz and Steigerwald, 2018; Stroebel and Swanepoel, 2014; York et al., 1999), and researchers value a categorical approach to diagnosis (Bishop, 2014; Snowling, 2012). This research indicates that the perspective of SLTs is currently misaligned with other key groups. There may exist legitimate clinical reasons for not using a term that is specific. Participants in this study described the unhelpful addition of more diagnoses when clients have multiple needs, and this issue demands further research to understand the perspective of these clients and families. Assuming that there are incidences where the disclosure of a specific term is truly detrimental, the current study indicates a need for a cohesive professional strategy for using nonspecific terms, so that this is done in an informed, consistent, and evidence based way.

## 8.2 Implications for Practice and the Profession

Terminological consistency has been a significant focus in speech and language therapy, however, attempts to unify the profession have yet to achieve this outcome. Many of the barriers presented in Figure 8.1 which prevented SLTs from using such terms can be addressed if appropriate strategies are developed. In making recommendations, it is noted that many disadvantages of diagnoses were observed in this study, causing many SLTs to question the merits of diagnosis in their practice. Whilst this may call for the profession to consider whether SLTs use diagnoses as part of their practice, there are currently other issues that are restricting the potential benefits of diagnosis. Generally, there is a perception that the benefits of terminology depend on public awareness, which will arguable only increase if SLTs use terms in practice (Walsh, 2005). By addressing these issues it will be possible to enable clinicians to make full use of specific terms where appropriate, which can facilitate the goal of terminological consistency. The main areas of required support identified by this study were structural issues and clinical guidance, and this section proposes some recommendations.

### 8.2.1 Structural Support

The findings of this study highlight some key areas for consideration in relation to the practice of SLTs and the infrastructure available to support them. It is evident that SLTs have autonomy in determining their diagnostic practice, but the absence of clear guidance leads to low confidence and inconsistency across the profession. As individual agents are often outlasted, DCR highlights the importance of structures in achieving positive social change (Alderson, 2013), suggesting that in order to achieve profession-wide goals, the onus cannot solely be placed on SLTs to change practice. Organisations are considered to have structural properties, termed “communication structures” (Roberts and O'Reilly, 1978), with associated norms and influence on agents. This research has highlighted changes that might be implemented in a way that facilitates consistency and outlasts individual actions. The following areas were identified as ways that could support SLTs in diagnostic practice:

1. **Promotion of access to training (e.g. CPD) for diagnostic processes throughout the careers of SLTs in order to maintain their practice in line with changes to the evidence base.** Training was perceived to be needed, but unavailable and inaccessible, often due to the geographical location (i.e. some participants felt that most opportunities were London centric). SLTs who were members of professional networks such as CENs and regional RCSLT Hubs spoke about the benefits of co-professional supervision and discussion. There is potential to increase support by developing training packages, increasing and promoting established networking groups, and encouraging the development of online networks. This is particularly pertinent at times of major change (Kamhi, 1995).
2. **Facilitation of ongoing and accessible channels between research and practice could support the implementation of the evidence base.** Participants in the current study were acutely aware of the importance of evidence based practice, particularly with regard to diagnostic criteria and the psychometric properties of assessment tools, but articulated a need for further guidance for application in clinical scenarios. SLTs are often advised to "make time" for research, a strategy that has not yet been effective (Metcalfe et al., 2001; O'Connor and Pettigrew, 2009). ASHA conducted a Knowledge-Attitude-Practices survey (Mullen, 2005) which indicated that without support such as clear practice guidelines, SLTs have difficulty translating research outcomes. This might be pursued through applied research training, particularly in preregistration courses; enhancing guidance for translating research outcomes to practice and the provision of ongoing research mentorship (e.g. Imison et al., 2016).
3. **Universal and targeted incorporation of the diagnostic process in preregistration courses to support diagnostic practice**. Pagnamenta and Joffe (2018) found that there is variation across UK universities in the content and number of hours of research training. The content of university curricula has not been investigated by the current study, but lack of training was a

strong qualitative theme. The findings provide direction for future investigation and review, with regard to the following key areas:

a. Interpretation and practical application of research outcomes related to diagnosis
b. Knowledge of a wide range of standardised assessments
c. Practical evaluation of the properties of standardised assessments
d. Strategies for the delivery of diagnosis to families and professionals with wide-ranging backgrounds

### 8.2.2 Recommendations for Clinical Guidelines

In congruence with previous research (e.g. Kamhi, 1995; Mullen, 2005), this study indicates that a lack of clinical guidance is perceived to negatively impact confident and effective clinical practice. A comprehensive strategy with specific guidance to support diagnostic decisions could therefore promote professional unity by providing a core reference point for SLTs to use in practice. The following recommendations have been developed from the areas that participants identified as most problematic, in combination with a review of current assessment tools that participants reported using (e.g. Dodd et al., 2002; Wiig et al., 2013), diagnostic recommendations (Bishop et al., 2016; 2017), and RCSLT policy and procedures (RCSLT, 2017b; 2017d; 2018a). To address areas of uncertainty that restrict SLTs from using specific diagnostic terms, the following points for development are suggested to supplement current criteria:

1. A common set of functional impact descriptors for areas to consider in clinical decision making for diagnoses that require functional assessment (e.g. DLD). These might refer to education, socialisation, self-esteem and self-regulation. Such criteria are provided in the DSM 5 for developmental diagnoses, but many primary speech, language and fluency diagnoses are not

currently included in DSM 5. This could serve as a common framework for SLTs to analyse a profile and provide a reference guide for SLTs with limited experience.

2. A tool for differential diagnosis to distinguish severe language needs from other diagnostic profiles such as autism and learning difficulties. This could be shared with other professionals when working collaboratively to diagnose clients and provide evidence to support SLTs in situations that present obstructive power dynamics.
3. Guidance for SLTs regarding the allocation of clinical time to diagnostic processes, including assessment, diagnosis and intervention.
4. Evidence based guidelines for working with children and their families around diagnosis, with insight from a broad range of families.
5. An agreed diagnostic term for clients for when the use of specific terms is deemed genuinely inappropriate.
6. Profession-wide policy regarding the delivery of diagnosis for children where service level criteria and systems do not permit capacity to offer ongoing care.

It is acknowledged that both the recommendations for guidelines and structural adaptations will take time and resources to implement. There is a need for a cohesive approach, in order to achieve sustainable outcomes in which clinicians are adequately supported in diagnostic practice and working to evidence based guidance. Relevant parties for involvement include the research community, providers of clinical training, professional bodies and clinicians themselves. Ideally, these groups would work in tandem to produce evidence based guidelines for diagnostic practice that are relevant for the nature of caseloads and incorporate the views of clients.

**Research community**: In the short term, research should continue to further investigate the needs within the profession. The implications of the current study suggest that early work should focus on understanding the preferences of clients and families in relation to diagnosis. Work into the longer term should seek to evaluate the impact of any recommended changes. Continued co-production with clinicians will aid targeted support, in order that service-specific needs can be accounted for across the UK.

**Professional body**: The professional body representing SLTs arguably has the most leverage for lobbying for, developing and implementing resources that can provide the structural support for clinicians. For example in the UK, RCSLT is a key provider of training. Collaboration with existing networks might be a key way to offer further training to clinicians in diagnostic practice, in response to the needs identified by the current work. In addition, RCSLT sets clinical guidelines for practice, and it is hoped that the findings of this study might inform future updates to guidelines for diagnostic practice.

**Training providers**: Universities might work collaboratively with RCSLT to develop and deliver a programme of training for diagnostic practice within pre-registration courses. This should be informed by any evidence pertaining to the needs and preferences of clients and families, and therefore should be subject to ongoing review.

**Clinicians**: It is evident that there is a considerable amount of expectation placed on clinicians as the frontline of diagnosis. This study uncovers the areas of deficit in which SLTs require further support. Once such materials are developed, it is hoped that clinicians will incorporate this into practice and remain engaged with the developing evidence base around diagnostic practice.

Whilst the recommendations proposed on the basis of the current research may be short term and require updating over time, the work provides an early indication of the current needs of clinicians in relation to their diagnostic practice. Given the longevity of the problem, and its impact on clients and their families, it is hoped that the issues arising from this body of work are addressed promptly. The planning and implementation should be conducted thoroughly with regular periods of review and consultation with key stakeholders, with a particular focus on obtaining views from a diverse range of families. It is a universally shared responsibility to continue to advocate for further work and improved resources.

## 8.3 Contribution to Knowledge

This study was the first in speech and language therapy to use DCR as a theoretical framework. Focusing on the social aspects of diagnosis has yielded benefits through identifying clear issues that have not previously been discussed. DCR encourages researchers to describe social contexts prior to strategising change processes. The thesis presented the current state of the terminology used in practice and its impact on a wider scale using a descriptive metaphor of a Rubik's cube (Figure 8-2). This illuminated the problems that occur as a result of clinicians striving to practice inclusively, by individualising terminology depending on the context. This not only reduces diagnostic consistency, but the avoidance of specific terms may be of detriment to clients who receive an alternative or no diagnostic term. Strategies for sustainable changes to clinical terminology use can now be informed by knowledge of underlying issues which manifest in current clinical practice.

This study contributes to knowledge by providing evidence to show what terminology is used by SLTs in clinical practice in the UK. The causes and consequences of inconsistency in terminology have been an ongoing source of debate in speech and language therapy. The literature review revealed limited empirical evidence contributing to this discussion which was largely based on the terminology used in research and speculative causes of variation presented in commentaries. However, the recognition of negative consequences of inconsistent diagnostic terminology for clients has driven recent attempts to achieve professional consensus (Bishop et al., 2016; Cunningham et al., 2019). The study has demonstrated that considerable variation exists in clinical terminology use – despite recent recommendations developed to achieve consistency (e.g. Bishop et al., 2017; RCSLT, 2017d). By showing which terms are used, it has been possible to identify patterns in the terms that are most frequently used or avoided across speech, language and fluency. It was clear from the historical review of terminology in Chapter 2 that the use of terms is transient. By investigating reasons that underpin terminology use, it has been possible to identify longstanding causes of variation from the perspective of SLTs, many of which were unaddressed or only considered speculatively in previous literature.

The main contribution of this thesis pertains to the novel conceptual categorisation of diagnostic terms in speech and language therapy as specific and nonspecific, which has received little prior attention in the context of the debate around terminological consistency. Findings indicated that SLTs in the UK are congruent with the literature in the view that specific terms hold particular benefits, such as the potential for awareness-raising, building an evidence base for interventions, and providing explanations to parents regarding the needs of their child. However, the analysis of diagnostic practice and terminology, as described by SLTs, showed that specific terms are often avoided when disclosing diagnoses to parents. This study has illuminated some practical, theoretical and social barriers that deter SLTs from using specific terms. In order for clients and the profession to yield the advantages associated with specific diagnostic terms, it is important that these barriers are addressed.

Caseload capacity was a practical barrier, and many participants reported only giving specific diagnoses to those who met service criteria, with other clients receiving an alternative term or no diagnosis. Some of the barriers were issues related to theory, such as the SLTs' uncertainty in interpreting recommendations from literature, difficulties implementing the evidence base into practice, and the absence of clinical guidelines for diagnostic practice. Without clear guidance, SLTs relied on clinical judgement to make diagnostic decisions, which often resulted in the use of alternative terms or no diagnosis. Social barriers to using specific terms included low public awareness of terms, the challenges communicating technical concepts, and high stigma associated with specific terms. In particular, medicalised terms such as “disorder” were avoided as they were perceived to be fear-inducing to parents, despite evidence indicating that parents are not concerned about the use of these terms (e.g. Betz and Steigerwald, 2018).

SLTs work with an array of families, and this study reveals for the first time that terms are individualised in order to meet their needs on the basis of clinical judgement. This suggests that research into the genuine needs and preferences of families from diverse backgrounds is urgently needed because there is an indication that some families might be excluded from the benefits associated with specific terms. This highlights a need for an evidence based and cohesive strategy for SLTs to follow for practice to be equitable.

The findings of this work can provide a contribution to practice. The study provides new evidence of SLTs experiencing low confidence in making diagnoses. This was perpetuated by difficulty accessing training in regard to diagnostic processes and the limitations of current clinical guidelines. These have been identified as areas for development that might support clinicians with diagnosis in the future. In addition, it has been possible to provide recommendations for diagnostic guidelines based on the evidence generated by this study. Many SLTs share the goal of achieving terminological consistency across the profession, whilst also emphasising the need to take an individual approach to diagnosis with each client - ensuring that terms are accessible and meet their needs. These priorities may not be compatible, and future research may reveal a genuine need for nonspecific terms to be used in practice. By mitigating the barriers to the use of specific terms, and providing clear universal guidance for alternative strategies, the profession might benefit from more informed, potentially more consistent, diagnostic practice.

## 8.4 The Application of Dialectical Critical Realism

This study provides a novel application of DCR principles to research in speech and language therapy and is part of a growing recognition of the benefits of critical realist (CR) research in the field. Whilst the current study appears to be the first DCR informed research in speech and language therapy, other studies in the field have used CR principles to inform and support the design and interpretation of research. Swift et al. (2017) proposed that middle range theories informed by CR can be abstracted to apply outcomes from studies of speech and language therapy practice to understand shared mechanisms across diverse social contexts. Nicoll (2017) applied CR in seeking to understand mechanisms that influence change in SLTs' practice in relation to children with speech sound disorders. CR was used by Nicoll (2017) to maintain the practical nature of the research, to guide methodological decisions such as the sampling technique, and to focus the interpretation towards social outcomes. CR was also used by Davies (2014b) to guide the design of a mixed methods study that evaluated the roles of parents and SLTs during interventions, which supported the identification of behaviours that were highly influential across varied social settings.

Using DCR as a theoretical stance supported the current study in examining social influences and developing a rich understanding of the underlying mechanisms that influence diagnostic practice. In addition to CR principles, DCR encourages researchers to focus on emergent patterns, research as part of change processes, and the four stages of MELD. These dialectic concepts have proved fundamental to the understanding produced by this study. The goal of DCR research is to inform and contribute to transformative social change that benefits society (Bhaskar, 2008). By providing a framework for observing social reality, DCR holds benefits for fields of research where there is a clear link to practice, as this can be used to inform strategies for practical change.

Some elements of DCR facilitated a general appreciation of research principles and the boundaries, some contributed to a deeper understanding of the issues arising, whilst others informed the role of the findings in extending the current knowledge base. The notion of *Being and Knowing,* which affirms that ontological events and epistemic knowledge are not interchangeable, has been acknowledged throughout the research. The DCR theory of *Natural Necessity* considers *Being* to exist at three levels of reality; empirical experiences of the world, actual activity, and the mechanisms that underpin activity. DCR emphasises the possibility of establishing causality (vis-a-vis generative mechanisms) in social contexts, in order that the findings explain, rather than describe the phenomena (Alderson, 2013). In this research, it has been possible to identify intransitive underpinning mechanisms that interact to produce emergent patterns, despite the extent of variation across clinicians.

In addition to the guiding theoretical perspectives, the design of the research methodology was informed by DCR principles. The decision to use an MMR design was influenced by the recognition in DCR that using quantitative or qualitative methods in isolation produces limited insight into social reality (Bhaskar, 1975). The design of the methods was supported by the *Four Planar Social Being* (Bhaskar, 1975), in order to capture all four elements of the social world: *material relations, broader social relations, interpersonal relations,* and *inner being.* This revealed that *interpersonal relations* and *inner being* have a considerable impact on diagnostic practice, and proposed recommendations target these areas, e.g. communication between SLTs with parents and wider professionals.

Whilst it is not typical to seek causality in social research, DCR argues that core factors underpin social contexts in a complex manner, and thus is not dissimilar from natural sciences. As a result, it has been possible to show the factors that appear to underpin SLTs' use of terminology and their diagnostic approach. SLTs practice in *open systems* that are influenced by multiple, and sometimes competing forces. These forces interact to produce e*mergent* observable patterns and in the current research, it has been possible to identify that many SLTs use colloquial terms with diagnostic intent and avoid using specific terms. This was underpinned by several interacting factors; examples of which included the confidence of the clinician, clinical time available, the level of awareness of terminology and the stigmatisation of diagnoses in society. The competing and contradictory nature of underpinning mechanisms partially explains the highly varied practice across SLTs. Recognising the factors that influenced diagnostic practice has shown how wider social issues beyond the profession, such as stigma, are impactful to practice.

DCR was particularly pertinent in the current study given the applied nature of the research area, and recent practical drives to achieve terminological consensus in the field. *MELD* provides a framework to examine transformative social change processes and focuses on generating an understanding of social reality before implementing changes so that they might be sustained. Using MELD in the current study has supported the development of recommendations based on the findings, by prompting a consideration of the societal impact of the findings. This is key to developing a holistic understanding and supporting change within the field. The use of MELD has evoked new insight to the clinical response to the introduction of DLD and offers a potential explanation as to why recommendations in their current form have not yet facilitated consistent use of terminology across SLTs. DCR highlights the role of *absence* in social research, considering the possibilities which exist before and after states of change. The pursuit of terminological consistency might next focus on the absences that have been identified by the current study, particularly in relation to clinical training, diagnostic guidelines and universally applicable protocols. The perceived lack of clinical guidance and training and risks involved in diagnosis contributed to low confidence in the approach for many SLTs. Evidence based implementation strategies might also support clinicians to work around the emergent problems, many of which have largely been unaddressed in the extant literature.

## 8.5 Reflections on the Research Process

From the initial conception of this project in 2015, there have been inevitable changes of varying magnitude across clinical practice norms, research, policy, and within myself, as the researcher. This natural evolution will have shaped the research which has accumulated in the final contribution to knowledge. Over the course of this study, developments in theoretical positionality have influenced the nature of the research design and execution. Observing the principles of DCR has guided my thinking as a researcher and facilitated the interpretation of social issues. DCR emphasises that researchers are not passive agents in the research process, as a positivist stance would suggest, but play an active role in producing knowledge of ontological events (Bhaskar, 2008). As part of this, researchers are encouraged to reflect on the factors that influence this subjectivity and are present in the research process (Alderson, 2016b).

There were both advantages and disadvantages to conducting this research as a speech and language therapy researcher without being an SLT myself. Many interviewees expressed interest in my "research expertise" and were keen to ask questions about the evidence base, particularly surrounding complex clinical cases. It is possible that SLTs were more open to discussing concerns with a non-clinician, as insider research has been found to be a barrier to discussing clinical topics in nursing research (Simmons, 2007). Other research has indicated problems with power dynamics when the researcher is part of the system being investigated (e.g. Wiese, 2014). However, a lack of clinical experience required more explanation from participants to achieve a shared understanding of concepts between interviewer and interviewee. This was partly advantageous, as this discussion provided detail in the process of interpretation.

It is important as the researcher to also acknowledge my position as a disabled person who had a very positive experience of receiving a diagnosis of cerebral palsy at age 15. This was a hugely significant event that facilitated access to educational and home support, reduced my experience of bullying, ignited friendships with other people with cerebral palsy, improved my sense of self and terminated my desperate plight to understand what was "wrong". My identity as a disabled person has been a constant source of reflection throughout the research process, especially when themes that resonated with my experience were identified or challenged in the findings. The strategies for reflexivity described in Chapter 4 proved useful as part of this process, including taking field notes during interviews to maintain the context of ideas as spoken by the participant and keeping a reflexive journal. It has taken much personal reflection and many conversations with supervisors, SLTs and disabled and non-disabled peers to ensure that my diagnostic experience has not projected extensively onto the interpretation of research findings.

## 8.6 Strengths and Limitations of the Research

This is the first study to provide empirical evidence for the terminology usage of SLTs in the UK and investigate the underpinning reasons. This has demonstrated the competing social factors that interact to result in inconsistent use of terminology. Listening to participants discuss their diagnostic practice has demonstrated contemporary barriers to diagnosis which can be used to inform future strategic endeavours to resolve problems with diagnosis in the profession. There are limitations inherent in all research, and those related to this study should be used to inform the interpretation. One of the main drawbacks is the sample size of the survey (n=374), which resulted in low statistical power. Consequently, some information was lost in the analysis through the necessary combining of data within variables. This reduced the possible analysis and some legitimate associations between variables and terminology usage may have been missed due to the loss in granularity. In addition, some groupings were tenuous due to the lack of an obvious link, particularly concerning the university that participants attended. A caseload review, such as that conducted by Cowie et al. (2001) would have revealed the actual diagnostic terminology use, and required a smaller sample size due to the intensive nature of this work. However, this would have been limited to investigating terminology used in formal documentation, which this study has shown is only one of many contexts where diagnoses are used.

Developing survey questions also presented challenges, particularly with regard to measurement and clarity of questions. The pilot study was integral as part of this process, but some issues remained. Survey instructions were provided and supplementary guidance was made available next to each question. Despite this, eight participants (2.13% of the sample) reported uncertainty regarding the interpretation of frequency, i.e. whether they were reporting the frequency of children on their caseload demonstrating particular characteristics, versus the likelihood of using a term given the appropriate clinical presentation. This indicates that more thorough attention might be required in the design of the survey presentation to ensure that participants interpret instructions with more certainty.

It was a known limitation of the survey that not all of the terms presented had identical definitions, for example, of the six terms presented in the survey for fluency, “cluttering” and “normal nonfluency” have more specific definitions, and so are not interchangeable with each other. All terms were potentially interchangeable with general definitions such as “fluency disorder”. Overall, terms with the most distinct definitions, such as “dysarthria” and “childhood apraxia of speech” were typically reported to be used with low frequency, and so had minimal impact on the interpretations of terminology variation taken from the findings. It is also acknowledged that the frequency groupings on Likert scales were relatively arbitrary, and the extent to which these are distinguishable to participants is debated in survey design literature (Bocklisch et al., 2012).

The interviews provided a means to explore survey results and understand aspects of the social context that influence terminology use. Rigorous qualitative research should uphold standards to ensure that it is credible and transferable (Guba, 1981). The methods employed to achieve this were discussed in Chapter 4, including the upkeep of a reflexive journal throughout the interview process. Reflexive journaling helped to maintain self-awareness (Cypress, 2017), and this was particularly useful during the interview process when my knowledge of the literature could influence preconceptions. It also supported me in bracketing personal experiences of diagnosis during the process of analysis and interpretation. Inevitably, human researchers are flawed and carry subjective biases (Lincoln and Guba, 1985), and it is acknowledged that consequently some findings could be under or overstated. It is important therefore that future research is conducted to further explore and challenge the findings of the current study.

The survey and interviews appeared to produce different findings regarding the specificity of terms used in practice. The most popular terms for speech and language in the survey were specific terms, whereas interviewees discussed a more prevalent use of colloquial terms or avoidance of diagnosis. This may be in part due to the fact that the survey did not investigate colloquial terms as diagnoses. It is also possible that survey participants gave socially desirable answers that were in line with research and clinical recommendations - such as those from the CATALISE project. Although social desirability is a recognised limitation of the survey method, it is more common when surveys are conducted with an interviewer or relate to sensitive topics (Krumpal, 2013). It may also be an issue of sampling bias; the survey participants experiencing particular difficulty with diagnosis in practice may have been motivated to volunteer their time to be interviewed. This raises a wider point; that the sample size of interview participants was relatively small, as is typical of qualitative research methods (Creswell, 1998). Whilst using a mixed methods approach can support generalisation, these limitations should be considered in any extension of findings to the wider population of paediatric SLTs. Given the differences in practice in other countries such as service structures, the findings should be interpreted with particular caution beyond the UK.

The value added by conducting mixed methods research has produced insight into a complex social issue (Creswell, 2003). The survey contributed empirical evidence of terminology use which has been missing from previous literature discussing the consistency in speech and language therapy. These findings were enriched by the explanation and contextualisation provided by the issues raised in interviews. However, it is acknowledged that the time taken to conduct both elements, including researcher training in two methodologies, was considerably increased relative to a study with a single method design (Creswell, 1998; Creswell and Plano Clark, 2017). By allocating more time to each phase of the research, it may have been possible to generate larger sample sizes, which for the survey could have enabled a multivariate regression analysis. For the qualitative element, it may have been possible to use more creative methods with participants, potentially immersed in their professional environment, or to pursue the perspectives of families.

## 8.7 Further Work

From this study, some important and unresolved issues can be identified that would benefit from additional research. This study has examined terminology use and diagnosis from the perspective of SLTs. Whilst many discussed the experiences of families, it is vital that the voices of clients are incorporated in further research to provide a richer understanding. The experiences and preferences of families, and particularly children, in receipt of speech, language and fluency diagnoses can inform better practice (McLeod, 2011; Merrick and Roulstone, 2011; Roulstone et al., 2012a; Roulstone and Lindsay, 2012a). This research also evokes a wider question about how a diagnosis impacts children and families from a wide variety of backgrounds. Some participants perceived aspects of diagnosis to be negative - with specific terms considered to evoke a higher degree of stigma - therefore resulting in a reluctance to diagnose. This is an area that warrants exploration as there may be wide variation across clients, and this clinical view contrasts with the limited evidence available regarding familial perspectives. Where families are treated differently using an individual and culturally sensitive approach, there needs to be further research to ensure that certain groups are not prevented from accessing resources. Future guidelines should consider ways that all families can be provided equal opportunities when SLTs adapt their practice. It also calls for the profession to work with the public to reduce the permeating stigmatisation of the diagnoses which SLTs provide.

One particularly problematic issue raised by interviewees related to the change to DLD criteria, which was observed to produce relatively higher numbers of children meeting diagnostic criteria compared to SLI. Consequently, clinicians were required to take decisions pertaining to service criteria, and several noted that provision was insufficient to meet the size of the diagnosable population. This suggests that there is a need for updated prevalence data for DLD in the UK since the change from SLI, to provide an evidence based rationale for service expansion and distribution of resources.

Whilst some SLTs have autonomy as to how they incorporate diagnosis in their practice, low confidence is not a positive driving force for the approach taken, and therefore needs to be addressed as part of the wider question. The low confidence of clinicians in this area was a key finding of the research, but it is not clear whether this extends to other areas of practice. Investigating self-efficacy and esteem relating to the clinical role may illustrate whether this issue needs to be specifically targeted towards diagnostic practice, or more broadly. Future research might investigate strategies, particularly at a structural rather than individual level, to support clinicians in terms of building confidence. Finally, in order to achieve professional unity across the UK, further work may focus on communication strategies across the profession. This includes fostering opportunities for SLTs to network but also involves how they can effectively communicate with families, other professionals and the public to raise the profile of speech, language and fluency needs.

## 8.8 Concluding Remarks

This mixed methods study has been the first in-depth exploration of diagnostic practice and terminology use of paediatric SLTs in the UK. The research provides insight into the current social reality of diagnosis and terminology usage in paediatric speech and language therapy. A vast amount of complex interacting social processes have been identified, and it has emerged that SLTs take varied approaches to diagnosis depending on practical, theoretical and social contextual factors. If consistency in terminology is a goal of the profession, these issues might be targeted in any strategy designed to achieve this outcome.

Findings indicate that the complex and heterogeneous clinical presentation of speech, language and fluency renders the identification of a single diagnosis challenging. It is possible that a dimensional approach is more suited to clinical practice, which is misaligned with the categorical approach that currently prevails within research. This highlights a need for research in this area to adopt a more joined-up approach with clinical practice. Clinical problems with consistency appear largely related to socially rooted causes, including the confidence of SLTs to make diagnoses, the people they communicate with, the structures they work within, and public perception of diagnoses. The SLTs in this study were highly motivated to meet the needs of each client, yet the current lack of an evidence base, guidance and the reliance on clinical judgement left clinicians feeling unsupported, and their diagnostic decisions open to subjectivity.

Research has shown that the receipt of diagnosis has a substantial impact on clients and their families with regard to access to provision and personal insights about their experiences of communication difficulties. Therefore it is paramount that the emerging issues are addressed in order to ensure parity in outcomes. It is clear however that these issues cannot be addressed at an individual level, and therefore support from governing structures such as the professional body is vital. This includes addressing imbalances across social contexts such as education and health, continuous efforts to challenge the stigmatisation of diagnoses, and the development of clinical guidance, training, and networking opportunities. Ultimately, this research calls for power to individual clinicians, enabled by wider bodies, in order to foster an approach to diagnosis which suits the needs of the profession and the public.

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# APPENDICES

## Appendix 1: Full Survey

### What diagnostic terminology are we using for primary forms of SLCN?

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#### Page 1: About the survey

This survey has been designed to answer the question: "*What diagnostic labels are used by SLTs in the UK to describe speech, language and communication needs?*"

If you are a speech and language therapist (SLT) working in the UK with children who have speech, language and communication needs (SLCN), we invite you to take part. If you have any questions about this study pleaseemail hannah.harvey@bcu.ac.uk

Are you a speech and language therapist (registered with HCPC) having practised in the UK and have experience working with children who have a primary form of SLCN? *Required*

○ Yes

○ No

Please enter a unique password, so that if you decide in the future that you would like to withdraw your responses, we are able to identify your answers.

## Page 2: About You

What age bracket do you fall into? *Required*

- ○ 20 - 29 years
- ○ 30 - 39 years
- ○ 40 - 49 years
- ○ 50 - 59 years
- ○ 60 - 69 years
- ○ 70 years +
- ○ Prefer not to disclose

What gender do you identify as? *Required*

- ○ Man
- ○ Woman
- ○ Both
- ○ Neither
- ○ Prefer not to disclose
- ○ Not listed here, and I would like to specify below.

My gender was not listed above, I identify as:

☐

What is your ethnicity? *Required*

○ White British or Irish

○ Any other White background

○ Asian Indian, Pakistani or Bangladeshi

○ Asian Chinese

○ Any other Asian background

○ Black African

○ Black Caribbean

○ Any other Black background

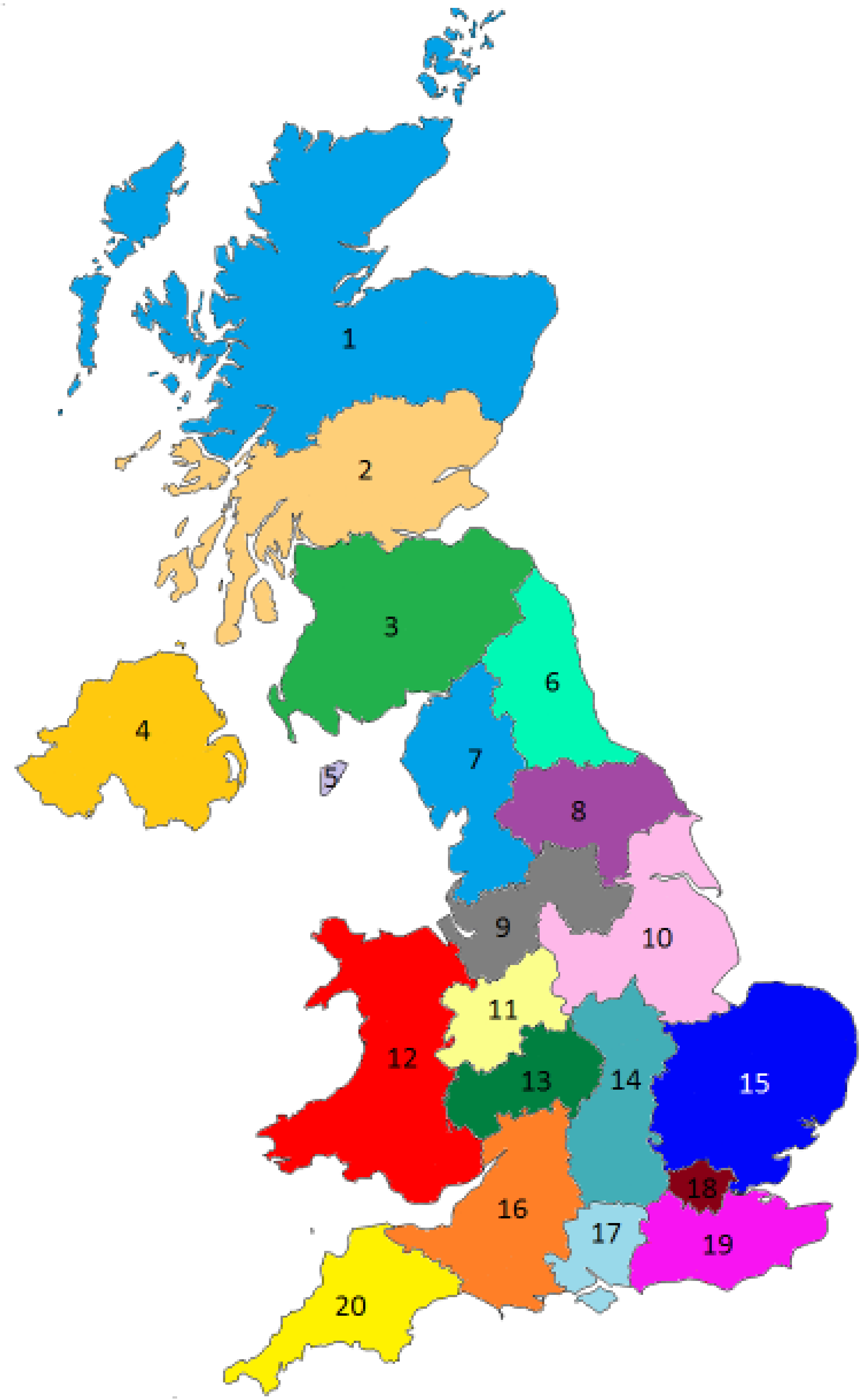
○ Mixed White and Asian Mixed

○ White and Black

○ Any other Mixed background

○ Prefer not to disclose

My ethnicity was not listed above, I identify as:

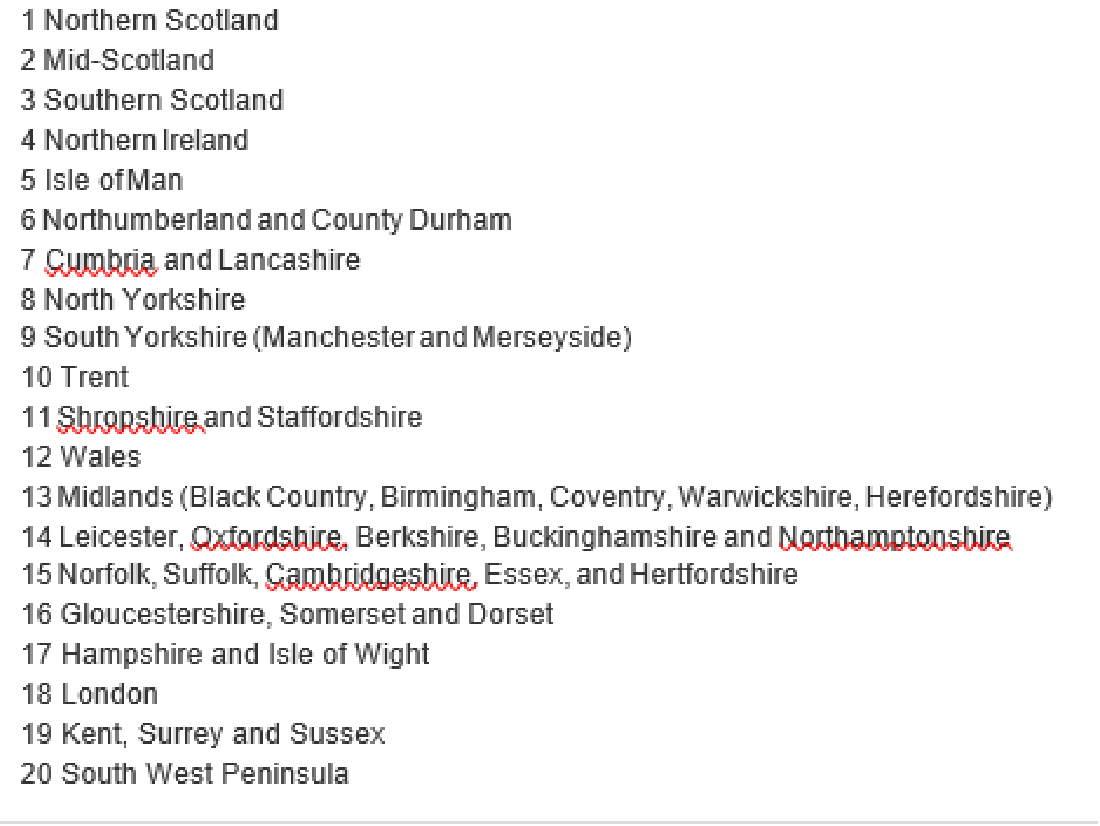


* *Required*

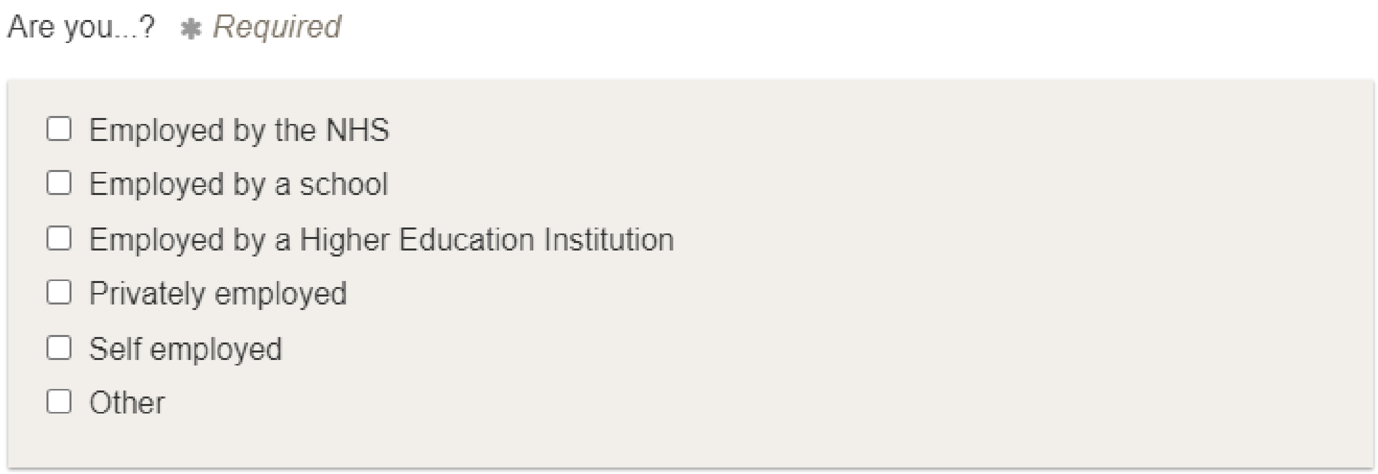
Please select ⌄

# Key for selection options

7 - Using the map as a guide, what region of the UK most closely describes where you currently practice?



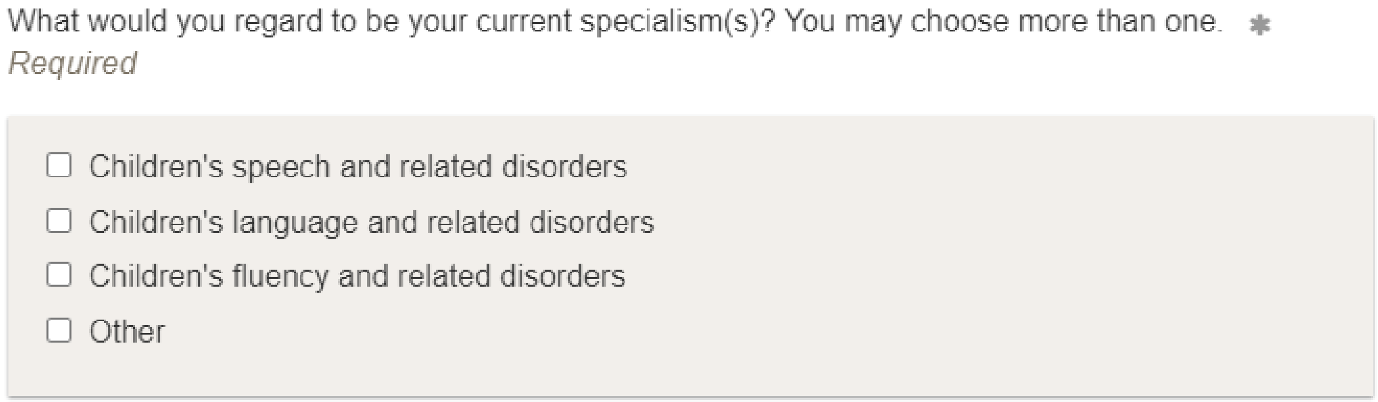
1 Northern Scotland
2 Mid-Scotland
3 Southern Scotland
4 Northern Ireland
5 Isle of Man
6 Northumberland and County Durham
7 Cumbria and Lancashire
8 North Yorkshire
9 South Yorkshire (Manchester and Merseyside)
10 Trent
11 Shropshire and Staffordshire
12 Wales
13 Midlands (Black Country, Birmingham, Coventry, Warwickshire, Herefordshire)
14 Leicester, Oxfordshire, Berkshire, Buckinghamshire and Northamptonshire
15 Norfolk, Suffolk, Cambridgeshire, Essex, and Hertfordshire
16 Gloucestershire, Somerset and Dorset
17 Hampshire and Isle of Wight
18 London
19 Kent, Surrey and Sussex
20 South West Peninsula



Are you...? ✱ *Required*

☐ Employed by the NHS
☐ Employed by a school
☐ Employed by a Higher Education Institution
☐ Privately employed
☐ Self employed
☐ Other

If you selected Other, please specify:



What would you regard to be your current specialism(s)? You may choose more than one. ✱ *Required*

☐ Children's speech and related disorders
☐ Children's language and related disorders
☐ Children's fluency and related disorders
☐ Other

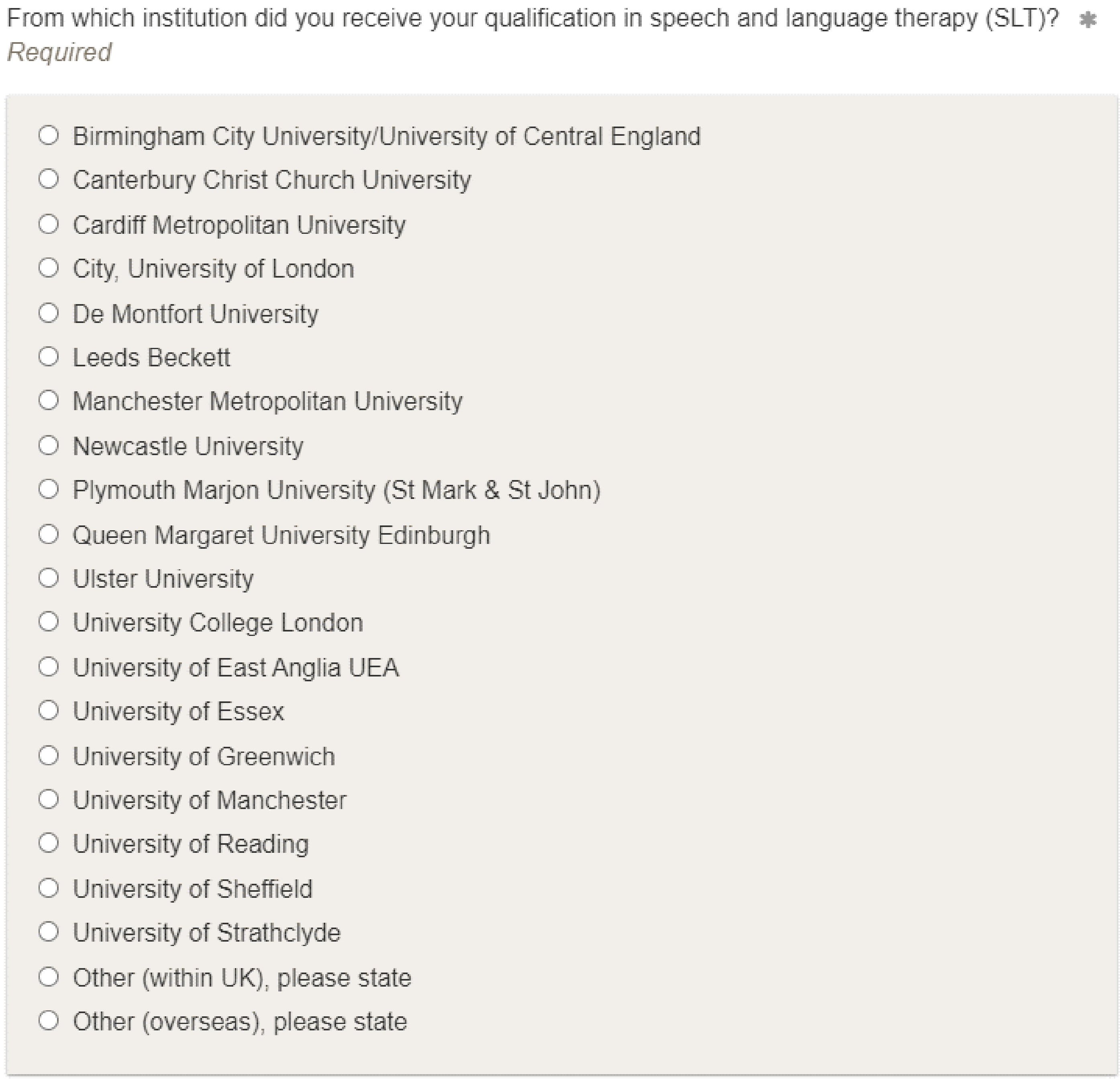
If you selected Other, please specify:

What setting(s) are you currently practising in? You may choose more than one. *Required*

- ☐ Mainstream school(s)
- ☐ Specialist school(s)
- ☐ Community centre(s)
- ☐ Outpatient hospital clinic(s)
- ☐ University clinic(s)
- ☐ Clients' homes
- ☐ Other

If you selected Other, please specify:

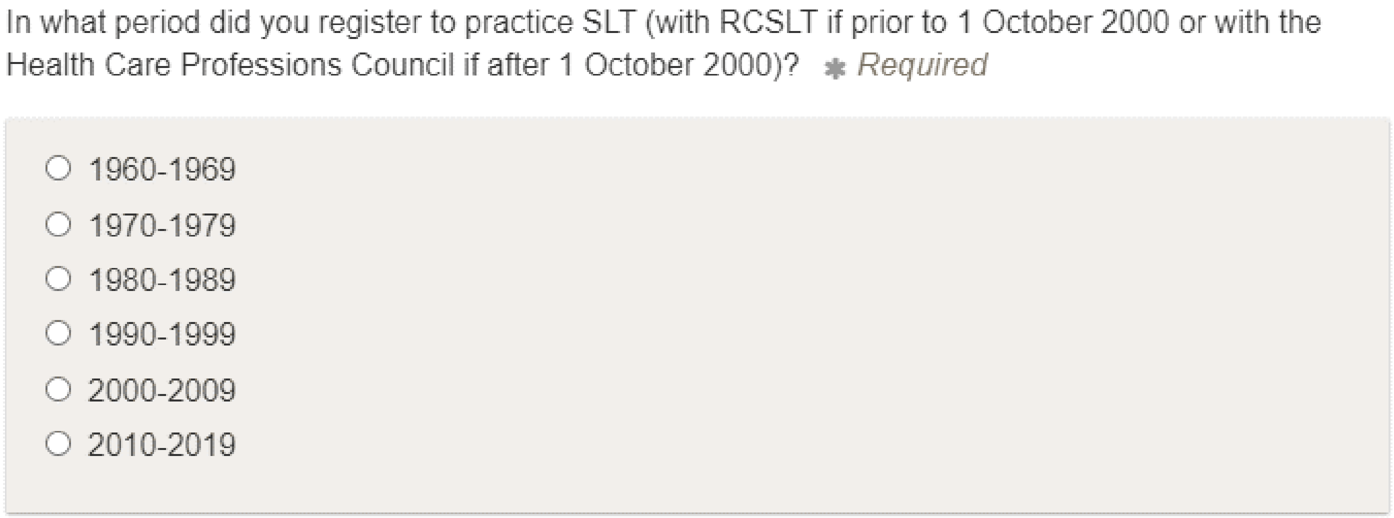
## Page 3: About your SLT Training



From which institution did you receive your qualification in speech and language therapy (SLT)? ✱
*Required*

- ○ Birmingham City University/University of Central England
- ○ Canterbury Christ Church University
- ○ Cardiff Metropolitan University
- ○ City, University of London
- ○ De Montfort University
- ○ Leeds Beckett
- ○ Manchester Metropolitan University
- ○ Newcastle University
- ○ Plymouth Marjon University (St Mark & St John)
- ○ Queen Margaret University Edinburgh
- ○ Ulster University
- ○ University College London
- ○ University of East Anglia UEA
- ○ University of Essex
- ○ University of Greenwich
- ○ University of Manchester
- ○ University of Reading
- ○ University of Sheffield
- ○ University of Strathclyde
- ○ Other (within UK), please state
- ○ Other (overseas), please state

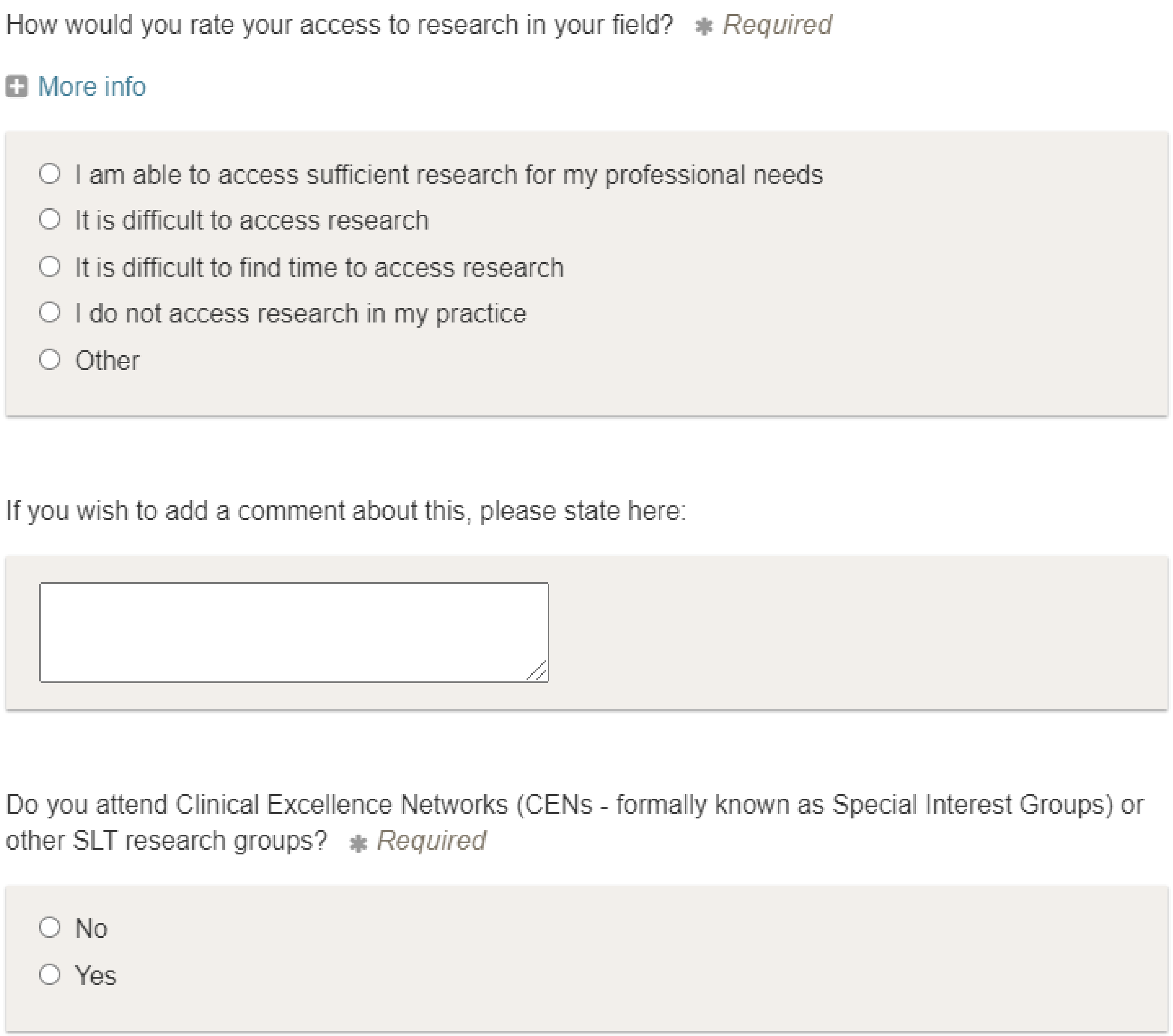
If you selected Other, please specify:



In what period did you register to practice SLT (with RCSLT if prior to 1 October 2000 or with the Health Care Professions Council if after 1 October 2000)? ✱ *Required*

- ○ 1960-1969
- ○ 1970-1979
- ○ 1980-1989
- ○ 1990-1999
- ○ 2000-2009
- ○ 2010-2019

## Page 4: Your Access to Research



How would you rate your access to research in your field? ✱ *Required*

⊞ More info

- ○ I am able to access sufficient research for my professional needs
- ○ It is difficult to access research
- ○ It is difficult to find time to access research
- ○ I do not access research in my practice
- ○ Other

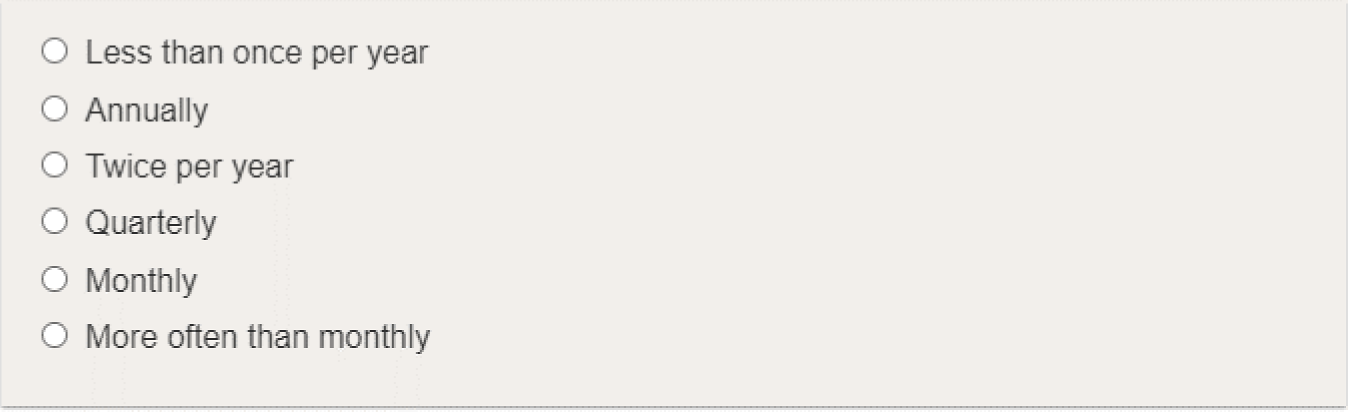
If you wish to add a comment about this, please state here:

☐

Do you attend Clinical Excellence Networks (CENs - formally known as Special Interest Groups) or other SLT research groups? ✱ *Required*

- ○ No
- ○ Yes

If you selected yes, how often do you (usually) attend CENs or other SLT research groups?



○ Less than once per year
○ Annually
○ Twice per year
○ Quarterly
○ Monthly
○ More often than monthly

## Page 5: SLCN - Diagnostic Terms

For the final part of the survey you will now be asked what diagnostic terminology you would use to describe a child with SLCN in the areas of (1) LANGUAGE, (2) SPEECH and (3) FLUENCY.

There may be some terms which you would not use interchangeably. We are interested in the frequency you would use a term (if at all), the term you use most often, and you are invited to give a reason for this if you wish to.

## Page 6: LANGUAGE

What diagnostic terminology would you use, if any, to describe a child with a primary form of SLCN in the realm of **LANGUAGE**? ? *Required* *Pl*ease don't select more than 1 answer(s) per row. Please select at least 17 answer(s).

| | I always use this term | I often use this term | I sometimes use this term | I rarely use this term | I never use this term |
|---|---|---|---|---|---|
| Developmental language delay | ☐ | ☐ | ☐ | ☐ | ☐ |
| Developmental language disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Expressive language disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language delay | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language difficulty (receptive and/or expressive) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language disability | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language impairment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language learning disability | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language learning impairment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language learning needs | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language learning problems | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language problems | ☐ | ☐ | ☐ | ☐ | ☐ |
| Primary language disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Primary language impairment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Receptive language disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Specific language impairment | ☐ | ☐ | ☐ | ☐ | ☐ |

If there are other diagnostic terms that you use for LANGUAGE, please state them here: (Please write out terms in full and do not use abbreviations, e.g. use "speech, language and communication needs", *not* "SLCN")

## Page 7: SPEECH

What diagnostic terms would you use, if any, to describe a child with a primary form of SLCN in the realm of SPEECH?
Please don't select more than 1 answer(s) per row. Please select at least 15 answer(s).

| | I always use this term | I often use this term | I sometimes use this term | I rarely use this term | I never use this term |
|---|---|---|---|---|---|
| Articulation disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Childhood apraxia of speech | ☐ | ☐ | ☐ | ☐ | ☐ |
| Children’s speech sound disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Consistent/Inconsistent phonological disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Developmental verbal dyspraxia | ☐ | ☐ | ☐ | ☐ | ☐ |
| Dysarthria | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phonological delay | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phonological disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Phonological impairment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Speech delay | ☐ | ☐ | ☐ | ☐ | ☐ |
| Speech difficulties | ☐ | ☐ | ☐ | ☐ | ☐ |
| Speech problems | ☐ | ☐ | ☐ | ☐ | ☐ |
| Speech disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Speech impairment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Speech sound disorder | ☐ | ☐ | ☐ | ☐ | ☐ |

If there are other diagnostic terms that you use for SPEECH, please state them here: (Please write out terms in full and do not use abbreviations, e.g. use "speech, language and communication needs", *not* "SLCN")

## Page 8: FLUENCY (OF SPEECH)

What diagnostic terminology would you use, if any, to describe a child with a primary form of SLCN in the realm of **FLUENCY (OF SPEECH)**? *Required* Please don't select more than 1 answer(s) per row. Please select at least 5 answer(s).

| | I always use this term | I often use this term | I sometimes use this term | I rarely use this term | I never use this term |
|---|---|---|---|---|---|
| Cluttering | ☐ | ☐ | ☐ | ☐ | ☐ |
| Dysfluency | ☐ | ☐ | ☐ | ☐ | ☐ |
| Fluency disorder | ☐ | ☐ | ☐ | ☐ | ☐ |
| Normal nonfluency | ☐ | ☐ | ☐ | ☐ | ☐ |
| Stammering | ☐ | ☐ | ☐ | ☐ | ☐ |
| Stuttering | ☐ | ☐ | ☐ | ☐ | ☐ |

If there are other diagnostic terms that you use for FLUENCY, please state them here:(Please write out terms in full and do not use abbreviations, e.g. use "speech, language and communication needs", *not* "SLCN")

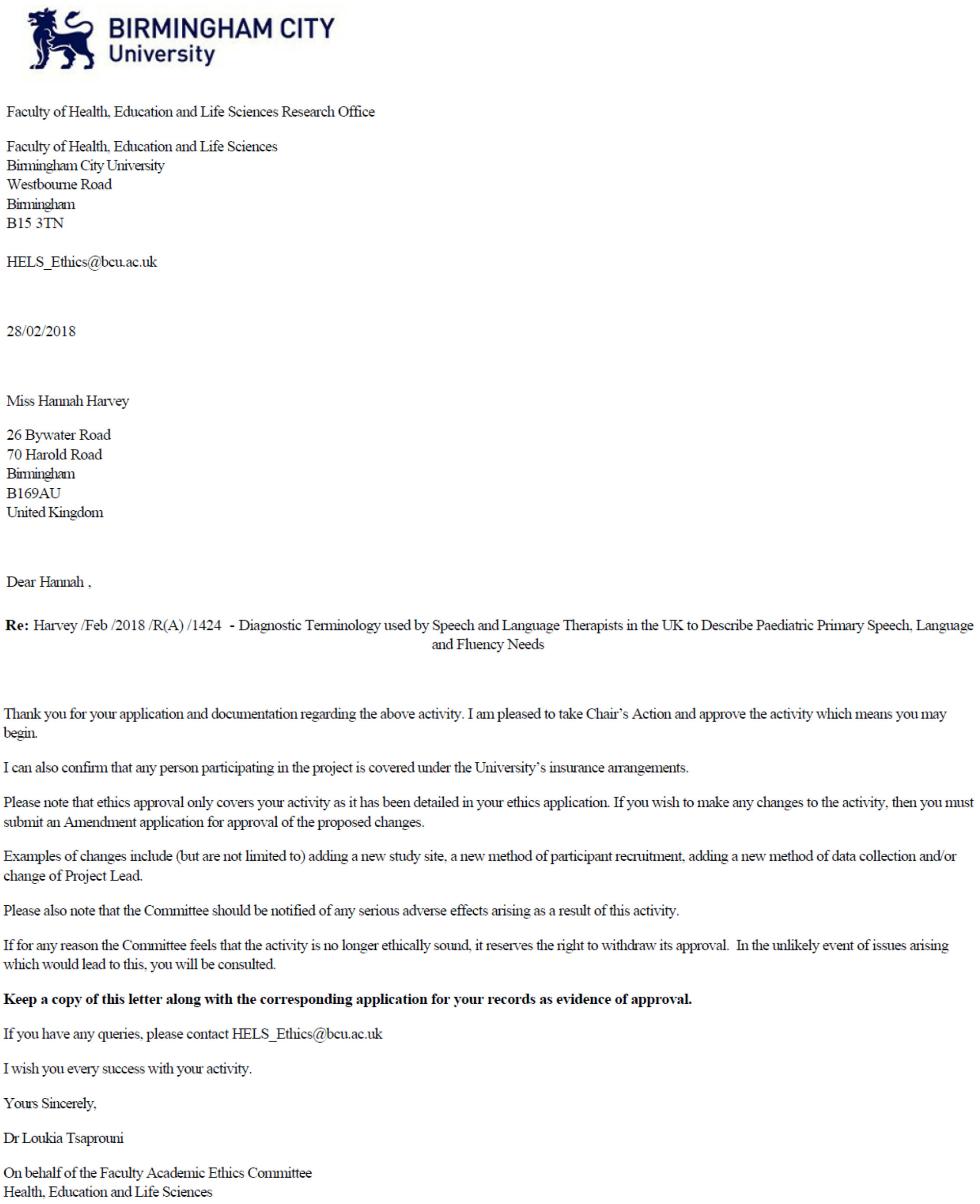
## Page 9: Final Thoughts

We'd be interested to know if you have any thoughts on the content of this survey, and the roleof diagnostic terminology in your practice. This will help to direct the research. If you would like to share any comments, please state them below:

Would you be interested in taking part in an interview to discuss issues relating to diagnostic terminology with other SLTs? If so, please provide your email address below, or send me an email to hannah.harvey@bcu.ac.uk

**Thank you very much for completing the survey. If you have any questions please contact hannah.harvey@bcu.ac.uk**

## Appendix 2: Study 1 Ethical Approval



BIRMINGHAM CITY
University

Faculty of Health, Education and Life Sciences Research Office

Faculty of Health, Education and Life Sciences
Birmingham City University
Westbourne Road
Birmingham
B15 3TN

HELS_Ethics@bcu.ac.uk

28/02/2018

Miss Hannah Harvey

26 Bywater Road
70 Harold Road
Birmingham
B169AU
United Kingdom

Dear Hannah ,

**Re:** Harvey /Feb /2018 /R(A) /1424 - Diagnostic Terminology used by Speech and Language Therapists in the UK to Describe Paediatric Primary Speech, Language and Fluency Needs

Thank you for your application and documentation regarding the above activity. I am pleased to take Chair's Action and approve the activity which means you may begin.

I can also confirm that any person participating in the project is covered under the University's insurance arrangements.

Please note that ethics approval only covers your activity as it has been detailed in your ethics application. If you wish to make any changes to the activity, then you must submit an Amendment application for approval of the proposed changes.

Examples of changes include (but are not limited to) adding a new study site, a new method of participant recruitment, adding a new method of data collection and/or change of Project Lead.

Please also note that the Committee should be notified of any serious adverse effects arising as a result of this activity.

If for any reason the Committee feels that the activity is no longer ethically sound, it reserves the right to withdraw its approval. In the unlikely event of issues arising which would lead to this, you will be consulted.

**Keep a copy of this letter along with the corresponding application for your records as evidence of approval.**

If you have any queries, please contact HELS_Ethics@bcu.ac.uk

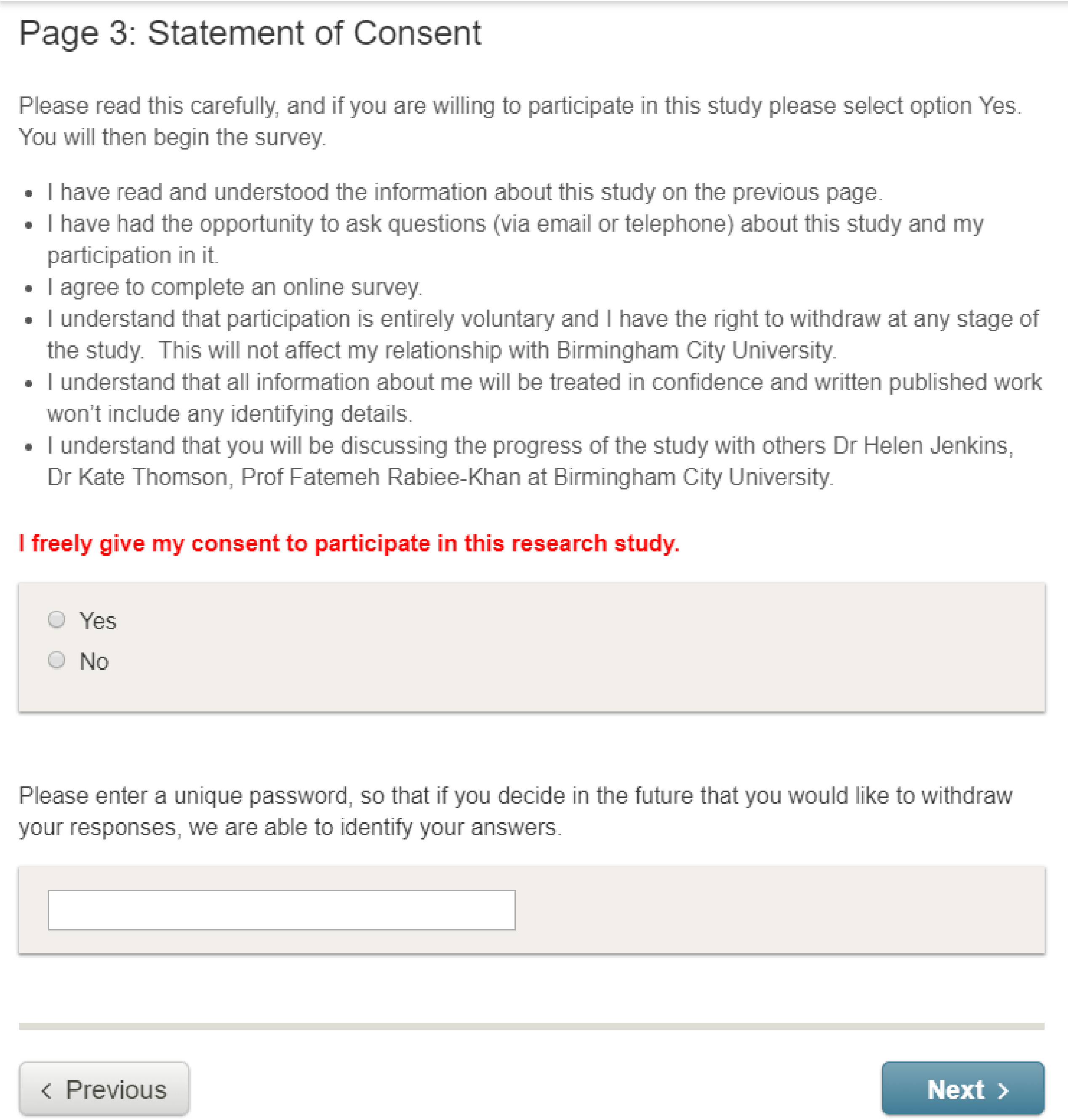
I wish you every success with your activity.

Yours Sincerely,

Dr Loukia Tsaprouni

On behalf of the Faculty Academic Ethics Committee
Health, Education and Life Sciences

Appendix 3: Study 1 Consent Procedure



## Page 3: Statement of Consent

Please read this carefully, and if you are willing to participate in this study please select option Yes. You will then begin the survey.

- I have read and understood the information about this study on the previous page.
- I have had the opportunity to ask questions (via email or telephone) about this study and my participation in it.
- I agree to complete an online survey.
- I understand that participation is entirely voluntary and I have the right to withdraw at any stage of the study. This will not affect my relationship with Birmingham City University.
- I understand that all information about me will be treated in confidence and written published work won't include any identifying details.
- I understand that you will be discussing the progress of the study with others Dr Helen Jenkins, Dr Kate Thomson, Prof Fatemeh Rabiee-Khan at Birmingham City University.

**I freely give my consent to participate in this research study.**

○ Yes
○ No

Please enter a unique password, so that if you decide in the future that you would like to withdraw your responses, we are able to identify your answers.

## Appendix 4: Study 1 Information Sheet

### Diagnostic terminology used for primary forms of SLCN

My name is Hannah Harvey and I am a PhD student at Birmingham City University. I am inviting you to take part in a research project being conducted with Birmingham City University. The project is supervised by Dr Helen Jenkins, Dr Kate Thomson and Professor Fatemeh Rabiee-Khan, who are researchers and lecturers at Birmingham City University. If you choose to take part, you will be directed to a 10 minute survey which will ask some general information about you, your current practice, and the diagnostic terms that you use.

### What is the project about?

This study will investigate the diagnostic terminology used by SLTs in the UK to describe primary forms of speech language and communication needs (SLCN). "Primary" in this context refers to the absence of another health condition which SLCN could be attributable to, such as Down syndrome or cerebral palsy.

Currently, there is very little – if any - research available which explores what diagnostic terminology for SLCN is being used. It is important to know what terminology is being used in clinical practice as it will provide direction and ensure the relevance of research in this topical area. The terminology used to describe SLCN affects individuals, as diagnoses are used in applications for services such as specialist educational placements, reports, and medical statements. It is important that terminology is recognised and understood by all professionals working to support them.

### Who is taking part?

All speech and language therapists working in the UK with children with a primary form of SLCN are being invited to take part in this project.

### Deciding whether I should take part.

Your participation is voluntary and you are free to withdraw at any time, without giving a reason. If you wish to withdraw during completion of the survey, please close the tab, your answers will not be received until you press Submit at the end. If you wish to withdraw after completion of the survey, please email Hannah Harvey (contact details below) providing your unique password which you will enter on the next page.

### What is involved?

If you agree to take part, you can give consent on the next page, and begin the survey by clicking *Next* which should take less than 10 minutes to complete. There will be questions asking for general information about you and the nature of your SLT work, and the diagnostic terminology you use for various forms of SLCN. There is an opportunity to take part in focus groups to discuss diagnostic terminology with other SLTs. If you are interested, please contact me directly or provide your email at the end (doing so will **not** make your answers identifiable).

### What will happen to the results of the study?

Please note that all data will be kept strictly confidential and will not be shared with anyone other than the research team. No names will be used. Data will be stored in a password protected file, and will be destroyed after 10 years.

The project is due for completion by October 2020. The results will be written up anonymously in my research report. I will be presenting these results to various audiences, such as at academic conferences. You can ask for a summary of the research findings.

### What are the potential advantages and disadvantages and risks of taking part?

There are no specific risks or disadvantages to taking part in the project. Although there are no direct advantages, it is hoped that the outcomes of this research will contribute to knowledge about diagnostic terminology used for SLCN, which can thus benefit the SLT profession.

### What happens if I have a problem or want to make a complaint?

If you have any concerns about the project please discuss these with us at any time. You can contact Hannah Harvey or Kate Thomson (contact details are below).

If you want to speak to someone not related to the project you can contact Dr Barbara Howard Hunt (Insurance Lead Ethics), Faculty of Health, Education and Life Sciences, Room 457 Seacole Building, Birmingham City University, Westbourne Road, Edgbaston, Birmingham B15 3TN, tel: 0121 331 7162, email: barbara.howardhunt@bcu.ac.uk

## Ethical approval

Ethical approval for this project was given by the Faculty of Health's Research Ethics Review Committee at Birmingham City University.

**Thank you for reading this information.**
Hannah Harvey
*PhD Candidate in the Department of Speech and Language Therapy, Birmingham City University*

## Contact for further information

*Hannah Harvey*
City South Campus
Birmingham City University
Westbourne Road
Birmingham
B15 3TN
Telephone: 0121 331 6067
E-mail: hannah.harvey@bcu.ac.uk
*Dr Kate Thomson*
Associate Professor
School of Health Sciences
City South Campus
Birmingham City University
Westbourne Road
Birmingham
B15 3TN
Telephone: 0121 331 6151
E-mail: kate.thomson@bcu.ac.uk

# Appendix 5: Study 2: Ethical Approval

BIRMINGHAM CITY
University

Faculty of Health, Education & Life Sciences Research Office
Seacole Building, 8 Westbourne Road
Birmingham
B15 3TN

HELS_Ethics@bcu.ac.uk

29/Oct/2018

Miss Hannah Harvey

hannah.harvey@bcu.ac.uk

Dear Hannah ,

**Re:** Harvey /1896 /R(A) /2018 /Oct /HELS FAEC - A qualitative investigation of the diagnostic terminology used by speech and language therapists in the UK to describe primary forms of paediatric speech, language and communication needs

Thank you for your application and documentation regarding the above activity. I am pleased to take Chair's Action and approve this activity.

Provided that you are granted Permission of Access by relevant parties (meeting requirements as laid out by them), you may begin your activity.

I can also confirm that any person participating in the project is covered under the University's insurance arrangements.

Please note that ethics approval only covers your activity as it has been detailed in your ethics application. If you wish to make any changes to the activity, then you must submit an Amendment application for approval of the proposed changes.

Examples of changes include (but are not limited to) adding a new study site, a new method of participant recruitment, adding a new method of data collection and/or change of Project Lead.

Please also note that the Health, Education & Life Sciences Faculty Academic Ethics Committee should be notified of any serious adverse effects arising as a result of this activity.

If for any reason the Committee feels that the activity is no longer ethically sound, it reserves the right to withdraw its approval. In the unlikely event of issues arising which would lead to this, you will be consulted.

**Keep a copy of this letter along with the corresponding application for your records as evidence of approval.**

If you have any queries, please contact HELS_Ethics@bcu.ac.uk

I wish you every success with your activity.

Yours Sincerely,

Dr Loukia Tsaprouni

On behalf of the Health, Education & Life Sciences Faculty Academic Ethics Committee

Appendix 6: Study 2 Consent Form

# PARTICIPANT CONSENT FORM

**Study Title: Diagnostic terminology used for children with primary forms of speech, language and communication needs**

*Name of Researcher:* Hannah Harvey

*Project Code:* *Participant identification number:*

| | | | | |
|---|---|---|---|---|
| Harvey /1896 /R(A) /2018 /Oct /HELS FAEC | | | | |

Initial box

| | |
|---|---|
| 1. I confirm that I have read the information sheet for this study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. | |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my legal rights being affected. | |
| 3. I understand that relevant sections of my data collected during the study may be looked at by individuals from Birmingham City University and from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. | |
| 4. I understand that personal data about me will be collected for the purposes of the research study including name and audio recordings, and that these will be processed in accordance with the information sheet. | |
| 1. I agree to audio/video recording and the use of anonymised quotes in research reports and publications. | |
| 2. I agree for my anonymised data to be used in future research, here or abroad, which has ethics approval. | |
| 3. I agree for my anonymised data to be used for teaching purposes. | |

| | |
|---|---|
| 4. I agree to take part in this study. | |

Initial box

*Name of Participant* *Date* *Signature*

*Name of Person taking Consent* *Date* *Signature*

**1 copy for participant; 1 copy for researcher site file;*

## Appendix 7: Study 2 Information Sheet

### Project title: Diagnostic terminology used for children with primary forms of speech, language and communication needs

My name is Hannah Harvey and I am a PhD student at Birmingham City University. I am inviting you to take part in a research project. The project is supervised by Dr Helen Jenkins and Dr Kate Thomson and Professor Fatemeh Rabiee-Khan who are researchers and lecturers at Birmingham City University. Before you decide about whether you wish to take part, please take time to read the following information carefully, and discuss it with others if you wish to.

### What is the project about?

This study will investigate the terminology that speech and language therapists in the UK are using to describe primary forms of speech, language and communication needs (SLCN), and the issues associated with diagnostic terminology when working with children. Currently, very little research has investigated this issue from the perspective of speech and language therapists. As part of a wider project, the research team conducted a UK-wide survey, which you may have taken part in, to investigate what diagnostic terminology is currently being used. In the next phase of this research, we are interviewing speech and language therapists to find out more about the issues relating to terminology when working with this client group.

### Who is taking part?

Speech and language therapists who have experience working in the UK with children with a primary form of SLCN are being invited to take part in this project. Primary in this context refers to SLCN which cannot be attributed to any other health condition such as Down syndrome or cerebral palsy.

### Deciding whether I should take part.

You are free to choose whether or not to take part in the project. You can also change your mind and stop taking part in the project at any time without prejudice - you do not need to give a reason for this decision.

### What is involved?

If you agree to take part you will be invited to take part in a one-to-one interview with me

(Hannah Harvey), which will be arranged to be at a time and place that suits you. The interview may take place over Skype if you prefer, or if accessing a mutually convenient location is problematic.

On the day of the interview I will ask you to sign a consent form to confirm that you agree to take part in the study. I will then ask you some questions about diagnostic terminology that you use in your practice. There is no need for you to prepare anything for this interview, and you do not have to answer any question that you do not wish to. The interview will probably take about 45 minutes to complete. I will audio record the interview so that I can type it up later. You will be offered the opportunity to read through this transcript and make any amendments if you wish to. Your participation is entirely voluntary and you may withdraw from the study at any time.

Please note that all data will be kept strictly confidential and will not be shared among anyone other than the research team. Participant numbers will be assigned to each audio recording so that no names will be used. In line with the Data Protection Act, your personal data will be stored in a password protected file, and will be destroyed within 6 months. The interview transcripts, which are anonymous, will be stored on password encrypted files at Birmingham City University for 10 years after this PhD project is complete. This is so that any further research into this area can be performed without needing to collect the data again. This PhD project is due for completion by October 2020.

**What will happen to the results of the study?**
The results of this project will be written up anonymously in my research report. No names or other identifying features will be included in the final report. On completion of the study all raw data will be destroyed. I might share my findings in a published report so that others can learn about the project. Again, this will be fully anonymous. You can ask for a short report stating what was found in the study.

**What are the potential disadvantages and risks of taking part?**
I do not think that there are any specific risks or disadvantages to taking part in the project other than the potential time inconvenience of completing an interview. If you don’t want to take part you do not have to and you are welcome to withdraw from the study at any time.

**What happens if the project stops or if I have a problem or want to make a complaint?**
If the project stops before we expect it to, we will contact you to tell you why this has happened. If you have any concerns about the project please discuss these with us at any time. You can contact myself (Hannah Harvey) or Kate Thomson (contact details are below).

If you want to speak to someone not related to the project you can contact the ethics committee via email: HELS_Ethics@bcu.ac.uk

**Data Protection**

Ethical approval for this project was given by the Faculty of Health, Education and Life Sciences (HELS) Academic Ethics Committee at Birmingham City University.

Birmingham City University (‘BCU’) 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.

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.

BCU 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 to oversee the quality of the study. Individuals from BCU may look at your research records to check the accuracy of the research study. The only people in BCU who will have access to information that identifies you will be people who need to contact you to (e.g. to disseminate findings), people who audit the data collection process and people who manage data storage and archiving.

BCU will retain evidence of your participation in this study through the signed consent form for up to three years after the project has been completed. Therefore we anticipate retaining some of your personal data up until June 2023. This is in accordance with the University’s legal obligations and the time you have available in which you may wish to raise any issues or concerns with us about your participation in this study.

After this period, BCU will securely destroy information held about you.

You can find out more about how we use your information by contacting Hannah Harvey by email - hannah.harvey@bcu.ac.uk

For more information about how the University can process your personal data for research, please see the University Privacy Statement, available here: https://www.bcu.ac.uk/about-us/corporate-information/policies-and-procedures/privacy-notice-for-research-participants

If you have any concerns about how we use or handle your personal data please contact the University’s Data Protection Officer using the following contact details:

By Email to: informationmanagement@bcu.ac.uk

By Telephone on: +44 (0)121 331 5288

By Post to: Data Protection Officer
Information Management Team
Birmingham City University
University House
15 Bartholomew Row
Birmingham
B5 5JU

If you are not content with the how we handle your information we would ask you to contact our Data Protection Officer to help you who will investigate the matter. However, you do also have the right to complain directly to the Information Commissioner at: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF. Information about the Information Commissioner is available at: http://ico.org.uk.

***Thank you for reading this information.***

Hannah Harvey
*Faculty of Health, Education and Life Sciences, Birmingham City University*

**Contact for further information**

***Dr Kate Thomson, PhD Supervisor***

Associate Professor
School of Health Sciences
City South Campus
Birmingham City University
Westbourne Road
Birmingham
B15 3TN

Telephone: 0121 331 6151
E-mail: kate.thomson@bcu.ac.uk

***Hannah Harvey, PhD Candidate***

Ravensbury 311
City South Campus
Birmingham City University

Westbourne Road
Birmingham
B15 3TN

Telephone:  0121 331 6067
E-mail:  Hannah.harvey@bcu.ac.uk

# Appendix 8: Statistically Non-significant Results of Chi-square Tesiting

## SPEECH TERMS

### Articulation Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | P | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 5.79 | 5 | 374 | 0.327 | 0.12 |
| **Clinical Specialism** | Y | 2.76 | 4 | 374 | 0.599 | 0.09 |
| **Setting of practice** | Y | 1.87 | 4 | 374 | 0.760 | 0.07 |
| **University type** | Y | 2.46 | 2 | 374 | 0.292 | 0.08 |
| **Period of initial registration** | Y | 2.22 | 3 | 374 | 0.529 | 0.08 |
| **Perceived access to research** | N | 1.06 | 2 | 374 | 0.786 | 0.05 |
| **CEN attendance** | Y | 1.98 | 1 | 374 | 0.160 | 0.07 |

*Table 3 Chi-square, probability and effect size values for statistically non-significant results for Articulation Disorder*

### Childhood Apraxia of Speech

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **Employment sector** | Y | 12.25 | 5 | 374 | 0.031 | 0.18 |
| **Clinical specialism** | Y | 4.384 | 4 | 374 | 0.357 | 0.11 |
| **Setting of practice** | Y | 5.016 | 4 | 374 | 0.286 | 0.12 |
| **University type** | Y | 5.161 | 2 | 374 | 0.076 | 0.12 |
| **Period of initial registration** | Y | 4.057 | 3 | 374 | 0.255 | 0.10 |
| **Perceived access to research** | Y | 6.571 | 2 | 374 | 0.087 | 0.13 |
| **CEN attendance** | Y | 0.066 | 1 | 374 | 0.798 | -0.01 |

*Table 4 Chi-square, probability and effect size values for statistically non-significant results for Childhood Apraxia of Speech*

### Children’s Speech Sound Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 4.358 | 5 | 374 | 0.500 | 0.11 |
| **Employment sector** | Y | 8.417 | 5 | 374 | 0.135 | 0.15 |
| **Clinical Specialism** | Y | 4.893 | 4 | 374 | 0.298 | 0.11 |
| **Setting of practice** | Y | 3.641 | 4 | 374 | 0.457 | 0.10 |
| **University type** | Y | 0.106 | 2 | 374 | 0.948 | 0.95 |
| **Period of initial registration** | Y | 2.900 | 3 | 374 | 0.407 | 0.09 |
| **Perceived access to research** | N | 6.605 | 2 | 374 | 0.086 | 0.13 |
| **CEN attendance** | Y | 0.746 | 1 | 374 | 0.388 | 0.05 |

*Table 5 Chi-square, probability and effect size values for statistically non-significant results for Children's Speech Sound Disorder*

## Consistent/Inconsistent Phonological Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 6.031 | 5 | 374 | 0.303 | 0.13 |
| **Setting of practice** | Y | 5.281 | 4 | 374 | 0.260 | 0.12 |
| **University type** | Y | 0.250 | 2 | 374 | 0.883 | 0.03 |
| **Period of initial registration** | Y | 4.859 | 3 | 374 | 0.182 | 0.18 |
| **Perceived access to research** | N | 2.753 | 2 | 374 | 0.431 | 0.09 |
| **CEN attendance** | Y | 0.054 | 1 | 374 | 0.816 | 0.01 |

*Table 6 Chi-square, probability and effect size values for statistically non-significant results for Inconsistent/Consistent Phonological Disorder*

## Developmental Verbal Dyspraxia

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 10.223 | 5 | 374 | 0.069 | 0.17 |
| **Employment sector** | Y | 7.746 | 5 | 374 | 0.171 | 0.14 |
| **Clinical Specialism** | Y | 1.259 | 4 | 374 | 0.868 | 0.06 |
| **Setting of practice** | Y | 2.645 | 4 | 374 | 0.619 | 0.08 |
| **University type** | Y | 0.262 | 2 | 374 | 0.877 | 0.03 |
| **Perceived access to research** | Y | 3.370 | 2 | 374 | 0.338 | 0.10 |
| **CEN attendance** | Y | 2.724 | 1 | 374 | 0.099 | -0.09 |

*Table 7 Chi-square, probability and effect size values for statistically non-significant results for Developmental Verbal Dyspraxia*

## Dysarthria

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 7.720 | 5 | 374 | 0.172 | 0.14 |
| **Employment sector** | Y | 6.677 | 5 | 374 | 0.246 | 0.13 |
| **Clinical Specialism** | Y | 4.239 | 4 | 374 | 0.375 | 0.11 |
| **Setting of practice** | Y | 8.277 | 4 | 374 | 0.082 | 0.15 |
| **University type** | Y | 0.090 | 2 | 374 | 0.956 | 0.02 |
| **Period of initial registration** | Y | 2.588 | 3 | 374 | 0.460 | 0.08 |
| **Perceived access to research** | N | 2.701 | 2 | 374 | 0.440 | 0.09 |
| **CEN attendance** | Y | 0.948 | 1 | 374 | 0.330 | -0.05 |

*Table 8 Chi-square, probability and effect size values for statistically non-significant results for Dysarthria*

## Phonological Delay

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 8.812 | 5 | 374 | 0.117 | 0.15 |
| **Employment sector** | Y | 7.988 | 5 | 374 | 0.157 | 0.16 |
| **Clinical Specialism** | Y | 6.662 | 4 | 374 | 0.155 | 0.13 |
| **Setting of practice** | Y | 7.869 | 4 | 374 | 0.096 | 0.15 |
| **University type** | Y | 2.363 | 2 | 374 | 0.307 | 0.08 |
| **Period of initial registration** | Y | 6.065 | 3 | 374 | 0.108 | 0.13 |
| **Perceived access to research** | Y | 1.439 | 2 | 374 | 0.697 | 0.06 |
| **CEN attendance** | Y | 0.692 | 1 | 374 | 0.406 | -0.04 |

*Table 9 Chi-square, probability and effect size values for statistically non-significant results for Phonological Delay*

## Phonological Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **Employment sector** | Y | 7.055 | 5 | 374 | 0.217 | 0.14 |
| **Clinical Specialism** | Y | 8.768 | 4 | 374 | 0.067 | 0.15 |
| **Setting of practice** | N | 2.847 | 4 | 374 | 0.584 | 0.09 |
| **University type** | Y | 3.585 | 2 | 374 | 0.167 | 0.10 |
| **Period of initial registration** | Y | 2.182 | 3 | 374 | 0.536 | 0.08 |
| **Perceived access to research** | Y | 1.387 | 2 | 374 | 0.709 | 0.06 |
| **CEN attendance** | Y | 0.007 | 1 | 374 | 0.933 | 0.004 |

*Table 10 Chi-square, probability and effect size values for statistically non-significant results for Phonological Disorder*

## Phonological Impairment

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 10.282 | 5 | 374 | 0.068 | 0.17 |
| **Employment sector** | Y | 5.445 | 5 | 374 | 0.364 | 0.12 |
| **Clinical Specialism** | N | 2.269 | 4 | 374 | 0.686 | 0.08 |
| **Setting of practice** | N | 11.09 | 4 | 374 | 0.03 | 0.17 |
| **University type** | Y | 0.734 | 2 | 374 | 0.693 | 0.04 |
| **Period of initial registration** | Y | 3.434 | 3 | 374 | 0.329 | 0.10 |
| **Perceived access to research** | Y | 5.643 | 2 | 374 | 0.130 | 0.12 |
| **CEN attendance** | Y | 0.333 | 1 | 374 | 0.564 | -0.03 |

*Table 11  Chi-square, probability and effect size values for statistically non-significant results for Phonological Impairment*

## Speech Delay

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **Employment sector** | Y | 5.254 | 5 | 374 | 0.386 | 0.12 |
| **Clinical Specialism** | Y | 1.232 | 4 | 374 | 0.873 | 0.05 |
| **Setting of practice** | Y | 3.252 | 4 | 374 | 0.517 | 0.09 |
| **University type** | Y | 1.257 | 2 | 374 | 0.533 | 0.06 |
| **Period of initial registration** | Y | 3.438 | 3 | 374 | 0.329 | 0.10 |
| **Perceived access to research** | Y | 2.472 | 2 | 374 | 0.480 | 0.08 |
| **CEN attendance** | Y | 0.067 | 1 | 374 | 0.796 | -0.01 |

*Table 12 Chi-square, probability and effect size values for statistically non-significant results for Speech Delay*

## Speech Difficulties

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 4.700 | 5 | 374 | 0.454 | 0.11 |
| **Clinical Specialism** | Y | 5.935 | 4 | 374 | 0.204 | 0.13 |
| **Setting of practice** | Y | 1.549 | 4 | 374 | 0.818 | 0.06 |
| **University type** | Y | 1.46 | 2 | 374 | 0.48 | 0.06 |
| **Period of initial registration** | Y | 3.790 | 3 | 374 | 0.285 | 0.10 |
| **Perceived access to research** | N | 1.285 | 2 | 374 | 0.733 | 0.06 |
| **CEN attendance** | Y | 0.790 | 1 | 374 | 0.374 | -0.05 |

*Table 13 Chi-square, probability and effect size values for statistically non-significant results for Speech Difficulties*

## Speech Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 6.399 | 5 | 374 | 0.278 | 0.13 |
| **Employment sector** | Y | 2.564 | 5 | 374 | 0.767 | 0.08 |
| **Clinical Specialism** | Y | 1.726 | 4 | 374 | 0.786 | 0.07 |
| **Setting of practice** | Y | 1.722 | 4 | 374 | 0.787 | 0.07 |
| **University type** | Y | 0.494 | 2 | 374 | 0.781 | 0.04 |
| **Period of initial registration** | Y | 1.333 | 3 | 374 | 0.721 | 0.06 |
| **Perceived access to research** | N | 2.537 | 2 | 374 | 0.469 | 0.08 |
| **CEN attendance** | Y | 0.100 | 1 | 374 | 0.752 | 0.02 |

*Table 14 Chi-square, probability and effect size values for statistically non-significant results for Speech Disorder*

## Speech Problems

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 14.05 | 5 | 374 | 0.015 | 0.19 |
| **Employment sector** | N | 8.512 | 5 | 374 | 0.130 | 0.15 |
| **Clinical Specialism** | N | 1.669 | 4 | 374 | 0.796 | 0.07 |
| **Setting of practice** | N | 3.366 | 4 | 374 | 0.499 | 0.10 |
| **University type** | Y | 1.191 | 2 | 374 | 0.551 | 0.06 |
| **Period of initial registration** | Y | 3.455 | 3 | 374 | 0.327 | 0.10 |
| **Perceived access to research** | N | 1.760 | 2 | 374 | 0.624 | 0.07 |
| **CEN attendance** | Y | 0.310 | 1 | 374 | 0.578 | 0.03 |

*Table 15 Chi-square, probability and effect size values for statistically non-significant results for Speech Problems*

## Speech Impairment

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 2.608 | 5 | 374 | 0.760 | 0.08 |
| **Employment sector** | N | 3.655 | 5 | 374 | 0.600 | 0.10 |
| **Clinical Specialism** | N | 4.243 | 4 | 374 | 0.374 | 0.11 |
| **Setting of practice** | N | 7.165 | 4 | 374 | 0.127 | 0.14 |
| **University type** | Y | 2.876 | 2 | 374 | 0.237 | 0.09 |
| **Period of initial registration** | Y | 4.471 | 3 | 374 | 0.215 | 0.11 |
| **Perceived access to research** | N | 2.327 | 2 | 374 | 0.507 | 0.08 |
| **CEN attendance** | Y | 0.225 | 1 | 374 | 0.635 | 0.03 |

*Table 16 Chi-square, probability and effect size values for statistically non-significant results for Speech Impairment*

## Speech Sound Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 1.904 | 5 | 374 | 0.862 | 0.07 |
| **Employment sector** | Y | 3.342 | 5 | 374 | 0.647 | 0.10 |
| **Clinical Specialism** | Y | 9.065 | 4 | 374 | 0.059 | 0.16 |
| **Setting of practice** | N | 1.581 | 4 | 374 | 0.812 | 0.07 |
| **University type** | Y | 1.562 | 2 | 374 | 0.458 | 0.07 |
| **Period of initial registration** | Y | 0.760 | 3 | 374 | 0.859 | 0.05 |
| **Perceived access to research** | Y | 1.171 | 2 | 374 | 0.760 | 0.06 |
| **CEN attendance** | Y | 0.217 | 1 | 374 | 0.642 | 0.02 |

*Table 17 Chi-square, probability and effect size values for statistically non-significant results for Speech Sound Disorder*

# LANGUAGE TERMS

## Developmental Language Delay

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **Clinical Specialism** | Y | 8.86 | 4 | 374 | 0.065 | 0.15 |
| **University type** | Y | 0.97 | 2 | 374 | 0.616 | 0.05 |
| **Period of initial registration** | Y | 3.05 | 3 | 374 | 0.384 | 0.09 |
| **Perceived access to research** | N | 2.63 | 2 | 374 | 0.453 | 0.08 |
| **CEN attendance** | Y | 0.28 | 1 | 374 | 0.598 | -0.03 |

*Table 18 Chi-square, probability and effect size values for statistically non-significant results for Developmental Language Delay*

## Developmental Language Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **Employment sector** | Y | 3.42 | 5 | 374 | 0.064 | 0.10 |
| **University type** | Y | 4.78 | 2 | 374 | 0.092 | 0.11 |
| **Period of initial registration** | Y | 0.60 | 3 | 374 | 0.896 | 0.40 |
| **Perceived access to research** | Y | 7.72 | 2 | 374 | 0.052 | 0.14 |
| **CEN attendance** | Y | 3.67 | 1 | 374 | 0.056 | -0.99 |

*Table 19 Chi-square, probability and effect size values for statistically non-significant results for Developmental Language Disorder*

## Expressive Language Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 9.02 | 5 | 374 | 0.108 | 0.16 |
| **Employment sector** | Y | 3.65 | 5 | 374 | 0.601 | 0.10 |
| **Clinical Specialism** | Y | 5.61 | 4 | 374 | 0.230 | 0.12 |
| **Setting of practice** | Y | 7.52 | 4 | 374 | 0.111 | 0.11 |
| **University type** | Y | 2.10 | 2 | 374 | 0.350 | 0.08 |
| **Period of initial registration** | Y | 4.94 | 3 | 374 | 0.176 | 0.12 |
| **Perceived access to research** | Y | 6.07 | 2 | 374 | 0.108 | 0.13 |
| **CEN attendance** | Y | 1.05 | 1 | 374 | 0.306 | -0.05 |

*Table 20 Chi-square, probability and effect size values for statistically non-significant results for Expressive Language Disorder*

## Language Delay

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **Employment sector** | Y | 8.37 | 5 | 374 | 0.137 | 0.15 |
| **Clinical Specialism** | Y | 2.43 | 4 | 374 | 0.657 | 0.08 |
| **University type** | Y | 1.39 | 2 | 374 | 0.500 | 0.06 |
| **Period of initial registration** | Y | 1.27 | 3 | 374 | 0.736 | 0.06 |
| **Perceived access to research** | Y | 2.04 | 2 | 374 | 0.565 | 0.07 |
| **CEN attendance** | Y | 3.00 | 1 | 374 | 0.083 | 0.09 |

*Table 21 Chi-square, probability and effect size values for statistically non-significant results for Language Delay*

## Language Difficulty (expressive and/or receptive)

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 7.43 | 5 | 374 | 0.191 | 0.14 |
| **Employment sector** | Y | 1.80 | 5 | 374 | 0.877 | 0.07 |
| **Setting of practice** | N | 1.50 | 4 | 374 | 0.827 | 0.06 |
| **University type** | Y | 0.91 | 2 | 374 | 0.635 | 0.05 |
| **Period of initial registration** | Y | 3.03 | 3 | 374 | 0.387 | 0.09 |
| **Perceived access to research** | Y | 3.86 | 2 | 374 | 0.277 | 0.10 |
| **CEN attendance** | Y | 0.55 | 1 | 374 | 0.459 | 0.04 |

*Table 22 Chi-square, probability and effect size values for statistically non-significant results for Language Difficulty (expressive and/or receptive)*

## Language Disability

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 10.81 | 5 | 374 | 0.055 | 0.17 |
| **Employment sector** | N | 1.59 | 5 | 374 | 0.903 | 0.07 |
| **Clinical Specialism** | N | 4.47 | 4 | 374 | 0.346 | 0.11 |
| **Setting of practice** | N | 8.63 | 4 | 374 | 0.071 | 0.15 |
| **University type** | N | 3.25 | 2 | 374 | 0.197 | 0.09 |
| **Period of initial registration** | N | 4.53 | 3 | 374 | 0.210 | 0.11 |
| **Perceived access to research** | N | 0.28 | 2 | 374 | 0.964 | 0.03 |
| **CEN attendance** | N | 0.59 | 1 | 374 | 0.442 | -0.40 |

*Table 23 Chi-square, probability and effect size values for statistically non-significant results for Language Disability*

## Language Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 7.04 | 5 | 374 | 0.218 | 0.14 |
| **Employment sector** | Y | 4.14 | 5 | 374 | 0.529 | 0.11 |
| **Setting of practice** | Y | 4.88 | 4 | 374 | 0.299 | 0.11 |
| **University type** | Y | 0.67 | 2 | 374 | 0.716 | 0.04 |
| **Period of initial registration** | Y | 1.81 | 3 | 374 | 0.613 | 0.07 |
| **Perceived access to research** | Y | 0.29 | 2 | 374 | 0.962 | 0.03 |
| **CEN attendance** | Y | 0.06 | 1 | 374 | 0.813 | 0.01 |

*Table 24 Chi-square, probability and effect size values for statistically non-significant results for Language Disorder*

## Language Impairment

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **Employment sector** | Y | 9.20 | 5 | 374 | .101 | 0.16 |
| **Clinical specialism** | Y | 2.41 | 4 | 374 | .661 | 0.08 |
| **University type** | Y | 0.49 | 2 | 374 | .781 | 0.04 |
| **Period of initial registration** | Y | 1.47 | 3 | 374 | .690 | 0.06 |
| **Perceived access to research** | Y | 3.65 | 3 | 374 | .302 | 0.10 |
| **CEN attendance** | Y | 0.51 | 1 | 374 | .474 | 0.04 |

*Table 25 Chi-square, probability and effect size values for statistically non-significant results for Language Impairment*

## Language Learning Disability

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 11.86 | 5 | 374 | 0.037 | 0.18 |
| **Employment sector** | N | 3.15 | 5 | 374 | 0.677 | 0.09 |
| **Clinical Specialism** | N | 1.67 | 4 | 374 | 0.796 | 0.07 |
| **Setting of practice** | N | 2.31 | 4 | 374 | 0.678 | 0.08 |
| **University type** | N | 1.75 | 2 | 374 | 0.416 | 0.08 |
| **Period of initial registration** | N | 2.45 | 3 | 374 | 0.485 | 0.08 |
| **Perceived access to research** | N | 0.84 | 2 | 374 | 0.839 | 0.05 |
| **CEN attendance** | N | 0.13 | 1 | 374 | 0.721 | -0.02 |

*Table 26 Chi-square, probability and effect size values for statistically non-significant results for Language Learning Disability*

### Language Learning Impairment

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 7.16 | 5 | 374 | 0.209 | 0.14 |
| **Employment sector** | N | 1.69 | 5 | 374 | 0.890 | 0.07 |
| **Clinical Specialism** | N | 2.68 | 4 | 374 | 0.612 | 0.09 |
| **Setting of practice** | N | 1.91 | 4 | 374 | 0.753 | 0.07 |
| **University type** | N | 0.87 | 2 | 374 | 0.648 | 0.05 |
| **Period of initial registration** | N | 3.14 | 3 | 374 | 0.371 | 0.09 |
| **Perceived access to research** | N | 0.70 | 2 | 374 | 0.873 | 0.04 |
| **CEN attendance** | N | 0.14 | 1 | 374 | 0.710 | 0.02 |

*Table 27 Chi-square, probability and effect size values for statistically non-significant results for Language Learning Impairment*

### Language Leaning Needs

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 16.43 | 5 | 374 | 0.006 | 0.21 |
| **Employment sector** | N | 1.36 | 5 | 374 | 0.929 | 0.06 |
| **Clinical Specialism** | N | 2.92 | 4 | 374 | 0.572 | 0.09 |
| **Setting of practice** | N | 2.36 | 4 | 374 | 0.670 | 0.08 |
| **University type** | Y | 0.79 | 2 | 374 | 0.675 | 0.05 |
| **Period of initial registration** | Y | 0.18 | 3 | 374 | 0.981 | 0.02 |
| **Perceived access to research** | N | 2.81 | 2 | 374 | 0.421 | 0.09 |
| **CEN attendance** | Y | 0.34 | 1 | 374 | 0.560 | -0.03 |

*Table 28 Chi-square, probability and effect size values for statistically non-significant results for Language Learning Needs*

### Language Learning Problems

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 8.94 | 5 | 374 | 0.111 | 0.16 |
| **Employment sector** | N | 4.66 | 5 | 374 | 0.459 | 0.11 |
| **Clinical Specialism** | N | 0.79 | 4 | 374 | 0.940 | 0.05 |
| **Setting of practice** | N | 1.19 | 4 | 374 | 0.751 | 0.07 |
| **University type** | N | 0.86 | 2 | 374 | 0.649 | 0.05 |
| **Period of initial registration** | N | 3.41 | 3 | 374 | 0.332 | 0.10 |
| **Perceived access to research** | N | 0.47 | 2 | 374 | 0.926 | 0.04 |
| **CEN attendance** | N | 0.71 | 1 | 374 | 0.400 | -0.04 |

*Table 29 Chi-square, probability and effect size values for statistically non-significant results for Language Learning Problems*

## Language Problems

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 14.04 | 5 | 374 | 0.015 | 0.19 |
| **Employment sector** | Y | 2.95 | 5 | 374 | 0.708 | 0.09 |
| **Clinical Specialism** | N | 8.15 | 4 | 374 | 0.086 | 0.09 |
| **Setting of practice** | N | 9.86 | 4 | 374 | 0.043 | 0.16 |
| **University type** | Y | 0.39 | 2 | 374 | 0.824 | 0.03 |
| **Period of initial registration** | Y | 9.35 | 3 | 374 | 0.025 | 0.16 |
| **Perceived access to research** | Y | 1.37 | 2 | 374 | 0.714 | 0.06 |
| **CEN attendance** | Y | 0.16 | 1 | 374 | 0.687 | -0.02 |

*Table 30 Chi-square, probability and effect size values for statistically non-significant results for Language Problems*

## Primary Language Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 6.22 | 5 | 374 | 0.285 | 0.13 |
| **Clinical Specialism** | N | 6.11 | 4 | 374 | 0.191 | 0.13 |
| **Setting of practice** | N | 14.42 | 4 | 374 | 0.006 | 0.20 |
| **University type** | Y | 0.86 | 2 | 374 | 0.650 | 0.86 |
| **Period of initial registration** | N | 7.03 | 3 | 374 | 0.071 | 0.14 |
| **Perceived access to research** | N | 1.38 | 2 | 374 | 0.710 | 0.06 |
| **CEN attendance** | Y | 0.43 | 1 | 374 | 0.514 | -0.03 |

*Table 31 Chi-square, probability and effect size values for statistically non-significant results for Primary Language Disorder*

## Primary Language Impairment

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 3.88 | 5 | 374 | 0.567 | 0.10 |
| **Clinical Specialism** | N | 2.73 | 4 | 374 | 0.603 | 0.09 |
| **Setting of practice** | N | 5.18 | 4 | 374 | 0.270 | 0.12 |
| **University type** | N | 1.94 | 2 | 374 | 0.380 | 0.07 |
| **Period of initial registration** | N | 9.54 | 3 | 374 | 0.023 | 0.16 |
| **Perceived access to research** | N | 1.52 | 2 | 374 | 0.678 | 0.06 |
| **CEN attendance** | N | 0.13 | 1 | 374 | 0.715 | -0.02 |

*Table 32 Chi-square, probability and effect size values for statistically non-significant results for Primary Language Impairment*

## Receptive Language Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 3.42 | 5 | 374 | 0.636 | 0.10 |
| **Employment sector** | Y | 5.97 | 5 | 374 | 0.309 | 0.13 |
| **Clinical Specialism** | Y | 6.57 | 4 | 374 | 0.161 | 0.13 |
| **Setting of practice** | Y | 1.29 | 4 | 374 | 0.863 | 0.06 |
| **University type** | Y | 3.90 | 2 | 374 | 0.142 | 0.10 |
| **Period of initial registration** | Y | 4.19 | 3 | 374 | 0.242 | 0.11 |
| **Perceived access to research** | N | 2.36 | 2 | 374 | 0.501 | 0.08 |
| **CEN attendance** | Y | 3.51 | 1 | 374 | 0.061 | -0.10 |

*Table 33 Chi-square, probability and effect size values for statistically non-significant results for Receptive Language Disorder*

## Specific Language Impairment

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\ /\phi$ |
|---|---|---|---|---|---|---|
| **Clinical specialism** | Y | 2.347 | 4 | 374 | 0.672 | 0.67 |
| **Setting of Practice** | Y | 9.402 | 4 | 374 | 0.052 | 0.16 |
| **University type** | Y | 0.88 | 2 | 374 | 0.646 | 0.05 |
| **Period of initial registration** | Y | 9.999 | 3 | 374 | 0.019 | 0.16 |
| **Perceived access to research** | N | 1.365 | 3 | 374 | 0.714 | 0.06 |
| **CEN attendance** | Y | 4.693 | 1 | 374 | 0.030 | 0.11 |

*Table 34 Chi-square, probability and effect size values for statistically non-significant results for Specific Language Impairment*

## FLUENCY TERMS

### Cluttering

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 14.12 | 5 | 374 | 0.015 | 0.19 |
| **Employment sector** | N | 2.12 | 5 | 374 | 0.832 | 0.08 |
| **Clinical Specialism** | N | 1.04 | 4 | 374 | 0.904 | 0.05 |
| **Setting of practice** | N | 2.03 | 4 | 374 | 0.731 | 0.07 |
| **University type** | Y | 0.13 | 2 | 374 | 0.938 | 0.02 |
| **Period of initial registration** | Y | 2.65 | 3 | 374 | 0.449 | 0.08 |
| **Perceived access to research** | N | 0.89 | 2 | 374 | 0.828 | 0.05 |
| **CEN attendance** | Y | 0.003 | 1 | 374 | 0.956 | 0.003 |

*Table 35 Chi-square, probability and effect size values for statistically non-significant results for Cluttering*

### Dysfluency

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 10.38 | 5 | 374 | 0.065 | 0.17 |
| **Employment sector** | Y | 5.62 | 5 | 374 | 0.345 | 0.12 |
| **Clinical specialism** | Y | 3.01 | 4 | 374 | 0.557 | 0.09 |
| **Setting of practice** | N | 2.21 | 4 | 374 | 0.696 | 0.08 |
| **University type** | Y | 0.38 | 2 | 374 | 0.826 | 0.03 |
| **Period of initial registration** | Y | 3.77 | 3 | 374 | 0.288 | 0.10 |
| **Perceived access to research** | Y | 0.95 | 3 | 374 | 0.813 | 0.05 |
| **CEN attendance** | Y | 0.28 | 1 | 374 | 0.600 | 0.03 |

*Table 36 Chi-square, probability and effect size values for statistically non-significant results for Dysfluency*

### Fluency Disorder

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | N | 4.98 | 5 | 374 | 0.418 | 0.12 |
| **Employment sector** | N | 12.41 | 5 | 374 | 0.030 | 0.18 |
| **Clinical Specialism** | N | 1.30 | 4 | 374 | 0.861 | 0.06 |
| **Setting of practice** | N | 1.03 | 4 | 374 | 0.905 | 0.05 |
| **University type** | Y | 1.87 | 2 | 374 | 0.392 | 0.07 |
| **Period of initial registration** | N | 1.36 | 3 | 374 | 0.715 | 0.06 |
| **Perceived access to research** | Y | 6.01 | 2 | 374 | 0.111 | 0.13 |
| **CEN attendance** | Y | 2.24 | 1 | 374 | 0.135 | -0.08 |

*Table 37 Chi-square, probability and effect size values for statistically non-significant results for Fluency Disorder*

## Normal Nonfluency

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 2.52 | 5 | 374 | 0.773 | 0.08 |
| **Employment sector** | Y | 2.08 | 5 | 374 | 0.839 | 0.08 |
| **Clinical specialism** | Y | 1.12 | 4 | 374 | 0.892 | 0.06 |
| **Setting of practice** | Y | 0.98 | 4 | 374 | 0.913 | 0.05 |
| **University type** | Y | 0.21 | 2 | 374 | 0.900 | 0.02 |
| **Period of initial registration** | Y | 0.38 | 3 | 374 | 0.945 | 0.03 |
| **Perceived access to research** | N | 3.57 | 3 | 374 | 0.312 | 0.10 |
| **CEN attendance** | Y | 0.07 | 1 | 374 | 0.787 | -0.01 |

*Table 38 Chi-square, probability and effect size values for statistically non-significant results for Normal Nonfluency*

## Stammering

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | p | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 4.11 | 5 | 374 | 0.534 | 0.10 |
| **Employment sector** | Y | 8.11 | 5 | 374 | 0.150 | 0.15 |
| **Clinical Specialism** | Y | 9.40 | 4 | 374 | 0.052 | 0.16 |
| **Setting of practice** | Y | 10.50 | 4 | 374 | 0.033 | 0.17 |
| **University type** | Y | 4.14 | 2 | 374 | 0.126 | 0.11 |
| **Period of initial registration** | Y | 4.25 | 3 | 374 | 0.236 | 0.11 |
| **Perceived access to research** | Y | 8.06 | 2 | 374 | 0.045 | 0.15 |
| **CEN attendance** | Y | 0.13 | 1 | 374 | 0.723 | -0.02 |

*Table 39 Chi-square, probability and effect size values for statistically non-significant results for Stammering*

## Stuttering

| Variable | Meets 4th assumption of $\chi^2$? | $\chi^2$ | df | N | P | $v\,/\phi$ |
|---|---|---|---|---|---|---|
| **UK Region** | Y | 1..81 | 5 | 374 | 0.875 | 0.07 |
| **Employment sector** | Y | 9.28 | 5 | 374 | 0.098 | 0.16 |
| **Clinical Specialism** | N | 8.45 | 4 | 374 | 0.077 | 0.15 |
| **Setting of practice** | N | 3.47 | 4 | 374 | 0.482 | 0.10 |
| **University type** | Y | 0.58 | 2 | 374 | 0.748 | 0.04 |
| **Period of initial registration** | Y | 4.06 | 3 | 374 | 0.255 | 0.10 |
| **Perceived access to research** | Y | 5.88 | 2 | 374 | 0.118 | 0.13 |
| **CEN attendance** | Y | 0.62 | 1 | 374 | 0.432 | -0.04 |

*Table 40 Chi-square, probability and effect size values for statistically non-significant results for Stuttering*