Title Page

The Inclusion of Children with Dyspraxia in Mainstream Primary Schools - An Investigation into the Perceptions, Strategies and Challenges faced by Teachers.

Professional Masters In Education (PME)

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme leading to the award of the degree of Professional Master of Education, is entirely my own work and has not been taken from the work of others, save to the extent that such work has been cited and acknowledged within the text of my work. I further declare that this dissertation has not been submitted as an exercise for a degree at this Institute and any other Institution or University. I agree that the Marino Institute of Education library may lend or copy the thesis, in hard or soft copy, upon request.

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9th May 2020

Abstract

This paper is concerned with the inclusion and education of children with dyspraxia in mainstream schools. Today, with the help of new legislation and policy implementation, children with special educational needs (SEN), including dyspraxia are being placed in mainstream primary schools, instead of special schools as was traditionally the case. An inclusive approach to education is now seen as the most effective and appropriate environment for these children. Taking into account this development, the fundamental aim of this study was to explore the concept of inclusive education from the perspectives of the teachers who teach children with dyspraxia. A vital objective of this study was to investigate the perceptions, strategies and challenges faced by teachers who include children with dyspraxia and finally, to uncover whether these strategies can help children with dyspraxia reach their educational potential.

A phenomenological approach, as a component of a mixed-methods approach, was employed for this research, in order to get a deep understanding of the reality of including children with dyspraxia in mainstream education and gain extensive insight into the lived experiences of the participants. Individual interviews were conducted with two primary school teachers of children with dyspraxia, attending a mainstream school. Questionnaires were distributed to thirty-eight teachers, all of whom teach children with dyspraxia in a mainstream setting. Through both instruments, the realities of, and challenges associated with implementing inclusive practices within a mainstream setting were highlighted by the teachers interviews.

Findings revealed that the inclusion of children with dyspraxia in mainstream education was predominantly successful for both the children and teachers. However, the research found that there were many challenges associated with the

implementation of inclusive strategies. In particular, participants felt that the department should provide more access to resources for schools and furthermore, this research found that class size, exceptionally large in Ireland, can negatively affect a teacher's ability to be inclusive.

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List of Abbreviations

SEN: Special Educational Needs

NCSE: National Council for Special Education

EPSEN: Education for Persons with Special Educational Needs

UNCRC: United Nations Conventions on the Rights of the Child

DES: Department of Education and Skills

CPD: Continued Professional Development

DCD: Developmental co-ordination Delay

DSM-V: Diagnostic Statistical Manual Fifth Edition

APA: American Psychiatric Association

SERC: Special Education Review Committee

SET: Special Education Teacher

NQT: Newly Qualified Teacher

ITE: Initial Teacher Education

ITE41: Initial Teacher Education for Inclusion

OECD: Organisation for Economic Co-operation and Development

EU: European Union

MIE: Marino Institute of Education

ICT: Information and Communications Technology

ASD: Autism Spectrum Disorder

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Chapter One: Introduction

This research addresses the perceptions, strategies and challenges faced by mainstream primary school teachers who include children with dyspraxia in their classes. This chapter will outline the context and rationale for the study, the aims and objectives of the study and provide an outline of the chapters.

Context and rationale for the study

The United Nations Convention on the Rights of the Child (UNCRC) (1989) states that every child has the right to education, irrespective of disability and without discrimination of any kind. Traditionally, children with disabilities were excluded from education due to perceived incapability (Minou, 2011). However, due to extensive developments such as advocating mainstream provision, teacher and school supports, in special education policy and legislation (The Education for Persons with Special Educational Needs Act (EPSEN), 2004; National Council for Special Education (NCSE), 2019), there has been a significant increase in the number of children with Special Educational Needs (SEN) attending mainstream schools (NCSE, 2014). Figures show that "fewer than 1% of students in Ireland now attend a special school" (NCSE, 2014, p.9). Dyspraxia, defined as an SEN, the definition of which will be addressed in chapter two, is often described as a discrete disorder, and considered a major learning barrier among school-aged children (Hands & Larkin, 2001). Those with dyspraxia experience challenges and difficulties in areas such as: coordination and motor skills; handwriting; participation and planning and organisational competencies (Kurtz, 2007). Therefore, due to difficulties engaging in a range of learning opportunities teachers must implement and adopt strategies across

the curriculum to help children with SEN reach their full educational potential (Murray, Baker, Murray-Slutsky & Paris, 2009).

Despite improved educational provision for children with disabilities and positive advances in policy on inclusive education, there are many challenges associated with the inclusion of children with dyspraxia in mainstream classes. Travers et al (2014) outlines several specific challenges to inclusive education in mainstream classes including teacher attitudes, inadequate training, a lack of resources and the organization of the education system.

Despite a plethora of challenges for teachers in mainstream classes, the NCSE (2013) reports that mainstream school is often the first choice for parents of children with SEN. Scholars in the area warn that placement in a mainstream class can sometimes have a negative impact upon learners with SEN as they are not socially included and this can negatively affect academic achievement and fuel marginalisation at times (Colum & McIntyre, 2019). Nonetheless, there are reports that inclusion is successful for the majority of children with SEN (NCSE, 2017).

On analysis of the literature, it was determined that there is a high prevalence of primary aged children with dyspraxia. This was noted by Predo and Goldschmidt (2019); Gibbs, Appleton & Appleton (2007); Zwicker, Missiuna, Harris, & Boyd (2012) and Anastasiadis, Kourtessis, Zizis, & Kioumourtzoglou (2016) who found that five to six percent of school-aged children are affected by dyspraxia. While these studies investigated varying aspects of dyspraxia, it provided a basis for the current study. Thus, the researcher was inspired to investigate how Irish mainstream primary school teachers include children with dyspraxia in their classes. As dictated by the DES, and set out in legislation such as the Education Act (1998), class teachers are

responsible for all aspects of a child's educational experience, therefore, the strategies implemented and challenges faced by these teachers in the current study provide a wealth of insight and knowledge for other teachers and professionals.

Aims and objectives of the study

This investigation aims to explore the concept of inclusive education, in particular, how children with dyspraxia are included in mainstream classes and any inherent challenges. Specifically, this study focuses on the perceptions, strategies and challenges faced by primary school teachers who include children with dyspraxia in their classrooms. Through this exploration, the researcher unearths how children with dyspraxia are included in line with policy and legislation. Both the strategies implemented and the challenges faced by teachers will be identified and explored to provide an appropriate, applicable and informative piece of research for teachers and professionals who include children with dyspraxia in their classrooms.

Positionality

The researcher has an interest in the area of dyspraxia. This interest stems from having a brother with dyspraxia, who struggled throughout his time in primary school. However, the author acknowledges that although there is an adequate understanding, she is not an expert hence the interest in researching the area. Furthermore, the author wishes to assert that this understanding and personal interest will not affect the analysis of the data collected throughout this investigation as the researcher remained impartial at all times.

Outline of Chapters

Chapter one of this investigation sets the context for the research. It states the rationale for undertaking the research as well as it's relevance as a field of study.

Chapter two reviews literature pertinent to the education and inclusion of children with dyspraxia in mainstream classes.

Chapter three identifies the chosen methodological design and the methods of data collection, analysis, sampling procedure, the sample, validity and reliability, ethical considerations and limitations of the study.

Chapter four presents the findings, analysis and discussion from the interviews carried out for the study.

Chapter five concludes the study. It presents a summary of the main findings and recommendations for future research are also included.

Chapter Two: Literature Review

Introduction

This chapter presents a review of research pertaining to the inclusion of children with dyspraxia in mainstream primary schools. The following aspects will be discussed: the definition, historical context, characteristics and prevalence of dyspraxia. Next, the author will discuss Piaget, the theoretical lens underpinning this investigation. Irish legislation and an inclusive curriculum will then be discussed.

Then, teacher awareness and understanding of dyspraxia, teacher training and continued professional development (CPD) will be considered. Finally, this chapter will explore the strategies implemented and challenges faced by teachers who include children with dyspraxia.

Defining Dyspraxia

There remains a lack of consensus regarding both the definition and description of dyspraxia and furthermore, its evolution is still insufficiently explained (Gibbs et al, 2007). However, an agreement has been established on the diagnostic entity of developmental coordination delay (DCD) to describe all children who exhibit developmental deficits of motor coordination (Costini, Roy, Remigereau, Faure & Le Gall, 2015). The term DCD is often used interchangeably with dyspraxia. However, research suggests that the broad term DCD is often preferred by medical experts and is in common usage by many educationalists (Gibbs et al, 2007). According to Peters, Barnett & Henderson (2001), this is because the term DCD describes an overall difficulty with movement. The definition of DCD and dyspraxia is harmonious, and therefore, should be used synonymously (Gibbs et al, 2007). A recent definition of dyspraxia is offered by Miller (2015, p.4) is a “disturbance in the programming and execution of learned movements in the presence of normal reflexes, co-ordination and sensation and in the absence of attentional and intellectual disturbances". For the purpose of this investigation, the term ‘dyspraxia’ will be used. The definition of dyspraxia is taken from The Diagnostic and Statistical Manual, Fifth Edition (DSM-V) (American Psychiatric Association (APA) (2013) who describe dyspraxia as a “motor skill disorder characterized by a marked impairment in the development of motor

coordination abilities that significantly interferes with performance of daily activities and/or academic achievement". This definition is chosen as it specifically notes the impairment in motor skills that interferes with activities and academic attainment which is at the basis of inclusive education for the current study.

Historical Context of Dyspraxia

According to research, the term 'dyspraxia' was coined by Julian De Ajuriaguerra and Mira Stambak in 1964 (Lemonnier, 2010). The term dyspraxia is largely derived from two sources. Firstly, dys comes from Latin meaning 'not easy' or 'difficulty with' and secondly, praxis is derived from Greek meaning 'action' or 'exercise' (The Institute for Neuro-Physiological Psychology, n.d.). Interest in children with motor coordination deficits became apparent in early twentieth century literature however, it was not scientifically studied until the latter half of the century (Kurtz, 2007). The first modern description of DCD was the report of "congenital maladroitness" by Collier in 1900 (Dewey & Wilson, 2001). In 1975 Dr Sasson Gubbay renamed it as the 'clumsy child syndrome' however, this name is no longer used (Stansell, 2007). Before that, the terms 'specific developmental disorder of motor function' used by The World Health Organization (1992) and DCD was accepted as the most appropriate term to describe a child with a specific motor coordination disorder.

Characteristics of Dyspraxia

According to the APA (2013), dyspraxia is characterized by a deficit in acquiring and executing coordinated motor skills which is below the expected chronological age. The essential characteristic of dyspraxia is a marked impairment in the development of motor coordination (Portwood, 2013). Difficulties in motor functioning may manifest as clumsiness and slow performances of motor skills that interfere with day-to-day learning and therefore all educational experiences (Portwood, 2013; Farmer, Echenne & Bentourkia, 2016). Most children with dyspraxia will run or walk to a certain degree, but their movements may seem floppy or uncoordinated. Often they lack fluidity and rhythm, and their balance is poor (Macintyre, 2015). Research also shows that children with dyspraxia do not usually have problems with understanding or knowledge required to undertake an activity, but rather with the processing of information, the ability to make a motor plan and the organization to complete it (Murray et al, 2009). "This can have a profound effect on the child's ability to succeed within the structure of the National Curriculum" (Addy, 2003, p. 4).

Prevalence of Dyspraxia

Globally, dyspraxia is considered to be a major learning barrier among school-aged children (Green, Baird, & Sugden, 2006) and research shows that dyspraxia, often described as a 'hidden problem' affects 5-6% of school-aged children (Gibbs et al, 2007; Zwicker et al, 2012; Anastasiadis et al, 2016 & Pedro & Goldschmidt, 2019). Research also suggests that dyspraxia is more likely to affect males (Caçola, 2016), with a recent ratio of 4:1 being suggested in the research literature (Walker, Shaw, Price, Reed & Anderson, 2017). Taking these figures into

consideration, teachers must have sufficient awareness and understanding of dyspraxia in order to implement appropriate support and intervention strategies.

Theoretical Lens

The author sought to understand the concept of dyspraxia through a constructivist Piagetian theoretical lens, as Piaget places an emphasis on active learning and this is an area of impairment for children with dyspraxia. This lens enables us to consider the importance of effective inclusion for children with DCD. One principle advocated by Piaget is that students learn best when they are active and interact with concrete materials (Sugarman, 1990). It is important to note that here, Piaget is advocating the use of hands-on experiences to help students learn (Blake, 2015). However, this is, in fact problematic as children who present with dyspraxia have difficulties in the planning and completion of fine and motor gross skills which can range from simple motor skills such as waving, to more complex motor skills such as sequencing steps to tie shoelaces (Newman, n.d.). These difficulties can undermine a child's effectiveness in an active learning environment as suggested by Piaget's theory. Therefore, this dissertation will investigate how teachers overcome this hurdle to include children with Dyspraxia in everyday active learning activities, despite a deficiency in fine and gross motor proficiency.

Irish legislation on inclusive education

The concept of inclusive education is a relatively new phenomenon in the Irish education system, with considerable developments in special education policy and

provision only occurring since the early 1990's. Children with SEN often faced marginalisation, segregation and exclusion from schools (Minou, 2011). In Ireland, all children have a constitutional right to free primary education (Government of Ireland, 1937), and education services have several duties under both The Education Act 1998 and The Equal Status Acts 2000-2004 to prohibit discrimination of any child (Lodge and Lynch 2004). In 1993, the report of the Special Education Review Committee (SERC) was published by the DES (1993) making this one of the most important events in the modern history of special education in Ireland (Armstrong, 2005). The report highlighted serious shortfalls in provision for children with SEN, highlighting inadequate curricular provision, constraints on integration in schools and a lack of specialist training for teachers (Griffin and Shevlin, 2007). Ultimately, this report impacted greatly on the way children with SEN are taught and included in mainstream schools today. Acts such as the 1998 Education Act, the 2004 EPSEN Act and the subsequent establishment of the NCSE mandates the creation of inclusive learning environments in schools. The EPSEN Act 2004 establishes a statutory framework for assessment and individual education plans for students with SEN, and also reinforced the importance of mainstream schooling for children with SEN.

In 2017, there was a reconfiguration of resources for children with SEN in mainstream schools. The 'New Allocation Model' was introduced in Ireland by the DES circular 0013/2017. 'The New Allocation Model' ensured that schools have greater certainty and discretion to identify the support and resources that are needed as opposed to the previous allocation model. This also meant that learning support and resource teachers were merged into one post of a special education teacher (SET) (DES, 2017).

In 2019, the Irish government, in partnership with the NCSE and other statutory bodies, started the foundations for having an all-inclusive model of schooling for children with SEN. Essentially, this means that all children of all abilities will be taught in one classroom. This is pertinent to the current study as it aims to investigate how children with dyspraxia are included in mainstream classes.

An Inclusive Curriculum

All students, regardless of their needs, should be provided with appropriate access to mainstream curricula (NCSE, 2010). "The term 'curriculum access' is the extent to which an individual child is enabled to participate in the same breadth of curriculum as other children of the same age and at a level appropriate to their needs" (Ware, Butler, Robertson, O'Donnell & Gould, 2011, p. 9). However, this curriculum may be altered in order to meet the varying needs of children with SEN. The term differentiation refers to the process of varying classroom organization and management, lesson content, activities, teaching, pedagogy, assessment methods and resources to consider the needs of individual students (Ware et al, 2011). The primary curriculum outlines the principles of differentiation, which are firmly embedded throughout it (Ware et al, 2011). Furthermore, the new Irish primary language curriculum has been reconfigured thus making it more inclusive for children with SEN (DES, 2017). This curriculum is designed to support and allow children to progress at their own pace and through relationships that are supportive, engaging and inclusive (DES, 2019).

Teacher Awareness and understanding of dyspraxia

Considerable progress has been made in developing inclusive education practices in Ireland and teachers are recognized as key to implement inclusive practices (De Boer et al, 2011). However, few studies have looked directly at whether the professionals, who are expected to help children with specific learning difficulties, have sufficient training and knowledge about them or understand their full implications (Kirby, Davies & Bryant, 2005). As a 'hidden disorder' dyspraxia is prevalent yet under-recognized and poorly understood by teachers, health professionals and parents (Missiuna, Moll, Law, King & King, 2006; Engel-Yeger, Kassis & Rosenblum, 2012). Anastasiadis et al (2016) report that not all teachers have the necessary knowledge to identify the symptoms of dyspraxia. Educators' knowledge regarding dyspraxia and their ability to identify and assess children with movement difficulties are crucial for effective interventional management (Anastasiadis et al, 2016). Furthermore, a survey conducted by Wilson, Neil, Kamps, and Babcock (2013) found that only 23% of teachers in the sample were familiar with dyspraxia. Additionally, 33% expressed that they had no understanding of dyspraxia and were not aware of it, but most teachers had knowledge of some of the indicators of dyspraxia. However, the researcher notes that the sample of this study was collected from Canada, the USA and the UK and therefore, results may not reflect an Irish context. Other aspects of awareness and understanding is highlighted by Kirby et al (2005) who found that teachers showed confusion between the terms dyspraxia and dyslexia and therefore, were found to make more comments on handwriting difficulties rather than difficulties specific to dyspraxia.

Teacher Training

Literature suggests that preservice students and newly qualified teachers (NQTs) may be somewhat unprepared for differentiation and inclusive pedagogical approaches within mainstream settings. This is evident in research highlighting inadequate training in SEN practices for NQTs (Hick et al, 2018). Research shows that in the 2014/2015 academic year there were 25,647 children in Ireland accessing additional low incidence resource teaching hours in primary school (NCSE, 2015). This suggests that there are a number of children accessing support in mainstream schools. This figure stands as a stark reflection on the need to provide training for teachers in order to accommodate and provide for children with SEN within mainstream settings. The researcher acknowledges that this data is prior to the new allocation model thus may not reflect the current study. However, this data will provide a context for the current study as it acknowledges the placement of children with SEN in mainstream provision. Furthermore, the current study aims to identify what inclusive practices are effective for children with dyspraxia.

Teachers are better able to assist children and provide inclusive education when they are equipped with appropriate training to meet the needs of all children (Leatherman & Niemeyer, 2005). The research literature shows a clear development in the connection between inclusive practices and initial teacher education (ITE) in Ireland. The 1978 Warnock report indicated that there needed to be advances in teacher training to ensure improvements in SEN provision (Department of Education and Science, 1978). This report not only called for the mandatory inclusion of SEN within all initial teacher education courses, but also recognized that a range of teaching qualifications in SEN became available (Davies & Garner, 1997). This

connection is reflected in the 'Initial Teacher Education for Inclusion (ITE4I)' Project. This provides insight into embedding inclusive pedagogy across the ITE curriculum and providing access to appropriate levels of specialist knowledge through the continuum of teacher development in Ireland.

Continued professional development

CPD is also important for inclusion, and refers to life-long teacher learning and comprises the full range of educational experiences designed to enrich teachers' professional knowledge, understanding and capabilities throughout their careers (Teaching Council, 2011). Cosán is the national framework for statutory professional standards in Ireland (National Teaching Council, 2018) which enables teachers to identify their CPD. According to The Teaching Council (2016), professional learning takes place at both a formal and informal level with the latter being particularly valuable. The current study aims to garner data in relation to training and CPD and establish what practices are currently ongoing in schools in relation to inclusive education.

Strategies

Teachers must adopt strategies across the curriculum, developing interventions and methods to help students with SEN, aiding learning, understanding and knowledge within the different subject areas (Murray et al, 2009). According to research, structured lessons, broken into sequential steps, together with the use of a task board, enable the child to work out what activity comes next (Murray et al, 2009).

Furthermore, research suggests that children with dyspraxia benefit from clear instruction and advance warning of the end of a lesson or the use of a task board allows for a smooth transition from one task to another (Murray et al, 2009). Research also found that teacher scaffolding is a beneficial strategy employed by teachers. According to Murray et al (2009) scaffolding is working with the child on a one-to-one basis until sufficient knowledge is in place enabling the child to benefit from the task. According to Lockhart and Law (1994) children with dyspraxia will also benefit from repetition and additional practice in particular, when learning handwriting. Research illuminates that the development of fine and gross motor skills is beneficial for children with dyspraxia. Gross motor skills refer to the control of the big muscles in the body including the arms, legs and core (Davies, Healy & Smith, 2016). Whereas fine motor skills refer to control of the intricate movements of the hands, fingers, face and toes (Davies et al, 2016). According to Lopes, Santos, Pereira & Lopes (2013) the development of these skills, which are considered the building blocks of more complex movements represent a key factor in the promotion of lifelong learning. Subsequently, children will require 'over-learning'. Through repetition, the new motor plans are developed, stored and gradually become more automatic.

Challenges for Teachers

Including children with SEN into mainstream schools, unarguably promotes a more inclusive society however, yet there are challenges. Travers et al (2004) outlines several specific challenges to inclusive education including teacher attitudes, inadequate training, a lack of resources and the organization of the education system.

According to Robertson (2002) educators face an increasingly complex organizational and pedagogical demands such as differentiation of instruction, task and activities in order to meet the needs of all pupils. However, due to lack of training, many teachers lack confidence in their ability to develop inclusive classrooms (Gross, 2002). For example, on average, in Ireland, 25-30% of all primary teachers work in supporting children with SEN although many of these mainstream teachers lack experience in teaching children with SEN (Griffin & Shlevin, 2011). Nonetheless, recent progress has been made concerning teacher training in Ireland with the mandatory inclusion of modules on inclusive education and differentiation (NCSE, 2019).

Class size can also be a challenge for teachers. According to the INTO (2019), class sizes have a huge impact on children's learning with evidence showing that in smaller classes, learning outcomes significantly improve. The complexity of the contemporary classroom is such that, with larger class sizes, teachers are finding it extremely difficult to meet the broad spectrum of needs of children (INTO, 2019). The Organisation for Economic Co-operation and Development (OECD) report the average class size in Irish primary schools is 25, compared with a European Average (EU) average of 20 (OECD, 2019). The INTO (2019) note that recommended methodologies are more achievable in classes with smaller numbers and so the quality of teaching and learning is improved.

A lack of resources has also been identified in the research literature as a challenge for teachers who include children with SEN in their classes. According to Wang (2009), sufficient resources have to be allocated to support these children's learning. Funding should thus support provision for enough facilities, teaching materials, appropriate curriculum and learning activities in order to fully support

children with dyspraxia. A multi-sensory approach to learning; involving visual, oral, auditory, tactile and kinaesthetic learning styles are most effective in supporting children with SEN (Koifman, 2017).

Conclusion

This chapter has examined the literature regarding inclusive education for children with dyspraxia in mainstream schools. The definition, characteristics, prevalence and historical context of dyspraxia were disclosed. Additionally, the legislation and policies concerning the education of children with SEN within mainstream education has also been presented. The complex nature of inclusion and its implementation has been examined throughout this chapter with reference to teacher awareness and understanding, teacher training and continued professional development.

Chapter Three: Methodology

Introduction

This study aims to explore the phenomenology of inclusive education and distinctively, the inclusion of children with dyspraxia in mainstream primary schools. Specifically, this study will investigate the perceptions, strategies and challenges faced by primary school teachers who support children with dyspraxia in their classes. This chapter presents the research methodology and research design under the

following subheadings: Research design, Data collection, Data analysis, Sampling procedure, The sample, Ethical considerations, validity and reliability and Limitations.

Research Design

A phenomenological approach will be taken for this study, through which 'lived experience' is examined (Denscombe, 2010; Creswell, 2011). The rationale for this is that it allows human beings, in the current study, teachers, to be understood from inside their subjective experiences (Mayoh & Onwuegbuzie, 2015; Todres & Holloway, 2006). A phenomenological approach offers the prospect of authentic accounts and a humanistic style of research however, a limitation of this approach is the lack of scientific rigour (Denscombe, 2010). According to Cohen, Manion & Morrison (2011), a paradigm is a way of researching a phenomenon. A mixed-method approach, one of three major research paradigms (Sommer-Haritts, 2011), was chosen for this particular study as it best supports the aim of gaining a greater understanding from the teachers perspectives. According to Cresswell (2014) mixed methods is an approach to research where the investigator gathers both qualitative and quantitative data, integrates the two and uses strengths of both to analyse the data. Mixed methods provide a deeper understanding of a range of experiences than a reliance on either method in isolation (Creswell, 2003). Qualitative research explores attitudes, behaviour and experiences through methods such as interviews and quantitative research generates statistics through the use of large and small scale survey research, using methods such as questionnaires (Dawson, 2019). According to Richie and Lewis (2003), qualitative research aims to present an in-depth and interpreted

understanding of the social world of research participants by learning about their social situation, their perspectives, theories and experiences. Whereas quantitative research can combat bias, resulting in reliable, valid results. Therefore, when the author combines statistical trends with personal experiences, this collective strength provides a better understanding of the research problem than either in isolation (Cresswell, 2014).

Data Collection

The current study will use both questionnaires and semi-structured interviews. A questionnaire is a research instrument consisting of a series of questions to gather information from respondents. According to Cresswell (2014), questionnaires are a useful tool for gathering data. They are an efficient use of time, provide anonymity for the respondents, and in turn, the possibility of a high return rate. Questionnaires form a factual basis for the research in which the interviews are conducted. Like all methods of data collection, there are of course limitations including the limited scope of the data and the time taken to design, pilot and refine the questionnaire (Cohen, Manion & Morrison, 2007).

The questionnaires will contain both open and closed questions. Closed, dichotomous questions are those that receive a ‘yes’ or ‘no’ response, they are quick to complete and straightforward to code (Cohen, Manion & Morrison, 2013). However, they may be inappropriate for a situation whose complexity is better served by a series of questions which catch that complexity (Cohen et al, 2013). Therefore, the questionnaire will include some open questions that “invite an honest, personal comment from respondents in addition to ticking numbers and boxes” (Cohen et al,

2007 p. 330). The questionnaires will be distributed to 38 participants, all of whom are currently serving as teachers in mainstream education.

Interviews will also be used in the research. An interview is an interchange of views between two or more people, the interviewer and the respondents with the objective of gathering relevant information for the purpose of research (Cohen et al, 2007). Interviews are particularly useful for getting the story behind a participant's experiences (Valenzuela & Shrivastava, 2002). According to Cohen et al (2007), the researcher can engage, understand and interpret the key features of the life-worlds of the participants and the topic under research. Furthermore, it is recognized that interviews are useful when dealing with complicated issues and offer the researcher a substantial grounding when exploring topics that are heavily based on emotion, opinion and experiences (King, Harrocks & Brooks, 2018). According to Cohen et al (2007), interviews are expensive in time, they are open to interviewer bias and they may be inconvenient for respondents, all which serve as limitations. The interviews will consist of a minimum of ten to a maximum of fifteen questions and will last no longer than thirty-five minutes. The semi-structured nature of the interviews allows the researcher to probe the interviewee to gain a greater scope of the topic under investigation.

Data Analysis

Thematic analysis will be used for qualitative data. "Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006 p. 79). The researcher will use the framework provided by Braun & Clarke (2006), a six phased guide to thematic analysis, as documented in figure 1:

Figure 1:

Phase 1	Familiarizing yourself with the data	This phase includes transcribing data if necessary, reading through the data and noting any initial ideas by the researcher.
Phase 2	Generating initial codes	This phase asks the researcher to begin coding the entire data set in a systematic way. The researcher will then relate the data to each new code.
Phase 3	Searching for themes	The researcher will combine and collect codes into potential themes and gather data relevant to each emerging theme.
Phase 4	Reviewing themes	This phase is the refinement and reviewing of themes and generating a thematic map for analysis
Phase 5	Defining and naming themes	This phase includes analysing the data specific to each theme in order to produce the overall story while generating definite names for each theme

Phase 6	Producing the report	This phase includes the final analysis of extracts, convincing the reader of the merits of the analysis through the choice of extracts that capture the essence of the study and finally, producing a scholarly piece that makes an argument in relation to the research question

(Braun & Clarke, 2006)

It is proposed that the data and information obtained from the interviews and questionnaires will be thematically divided and analyzed. This allows the author to identify recurrent patterns across the data set (Braun & Clarke, 2006). The researcher will listen to the interview recordings and read the transcripts repeatedly to discover and fully understand the prevailing themes that emerge from the information that was collected during the interviews. Prominent key words will be inserted into excel to highlight the recurrence of specific vocabulary. Quantitative data will be entered into Microsoft Excel and the answers will be tallied in order for analysis to take place. The data from both sets will then be categorized by themes rather than by the participants' responses in isolation. This method of arranging the data gives the researcher scope within the topic and makes identifying common responses and themes easier (Clarke, Braun & Hayfield, 2015). Also, it allows the researcher to identify some differences that arose between interviews.

Sampling Procedure

The method of purposive sampling was used to gather the sample for this research. This is a non-probability sampling technique which targets a specific group, based on their knowledge, relationships and expertise regarding a research subject (Cohen et al, 2007). Choosing, contacting and organizing candidates for data collection play a significant role in the success of the interview processes (Punch, 2006). It is imperative that the participants selected are relevant to the research topic and the information they provide will relate to the questions being posed.

The sample

The questionnaires will be given to 38 teachers. These will consist of primary school teachers and Special Education Teachers (SET)from a variety of primary schools. The interviews for this research will be conducted on two primary school teachers, all of whom are currently practising and have considerable experience in this domain: teaching children with SEN, in particular dyspraxia in a mainstream classroom. The two teachers chosen have varying backgrounds and circumstances concerning their teaching careers. The first teacher was chosen because they have over thirty-four years in the profession. This was the longest-serving teacher out of the sample. The researcher also chose another teacher who works specifically in the area of SEN and dyspraxia. The rationale for choosing these two was that sample one may be able to identify a different perspective on dyspraxia over a vast number of years and sample two may have additional insights from SEN specific training.

Validity and Reliability

Validity and reliability are key components to effective research (Cohen et al, 2007). Validity is defined as the extent to which the concept is accurately measured, and reliability refers to the consistency of a measure (Heale & Twycross, 2015). One cause of invalidity in qualitative research is bias. However, the use of triangulation can increase the validity of data and minimize bias (Mayoh & Onwuegbuzie, 2015). Triangulation may be defined as the use of two or more methods of data collection in the study of some aspect of human behaviour (Cohen et al, 2007). In the current study, a mixed methods approach provides triangulation. Furthermore, the reliability of interviews can be enhanced by the coding of responses (Cohen et al, 2007) as will be carried out. In terms of quantitative data collection, the reliability can be upheld through the anonymous nature of the questionnaire however, it can be difficult to identify dishonesty (Cohen et al, 2007).

Limitations

The following limitations are acknowledged by the researcher. At the outset, the limited word count creates a narrow lens to investigate the area. The research was conducted in one county and therefore results cannot be generalized geographically. Furthermore, the small-scale sample of qualitative participants does not reflect the opinions and experiences of all teachers. However, the researcher is confident that this study adequately represents the understanding, strategies and challenges faced by some teachers who include children with dyspraxia in their mainstream classes.

Ethical Considerations

Social researchers have a responsibility for drawing up and conforming to a set of ethical guidelines (May, 2001). All researchers should employ accurate methods of data gathering and analysis and report data accurately to avoid fabrication and falsification of data – which is misconduct (Sarantakos, 2012). For this research study, a detailed ethics form was submitted to Marino Institute of Education (MIE) and approval was granted for all aspects of the research. Additionally, informed consent forms were distributed to all participants highlighting the voluntary nature of participation, informing participants of their right to withdraw at any stage of the research and assuring confidentiality to all participants. To ensure confidentiality, the following codes were used: T1 and T2 were used for the participants of the semi-structured interviews. S1 to S38 were used for the questionnaire participants. Furthermore, this study conforms to all research ethical guidelines as set out by MIE.

Conclusion

This chapter described the research design that best fits the purpose of this study and justification for the methods selected by the researcher to carry out this study to its full potential. The sampling procedure and the data collection and analysis techniques are illustrated and the reasons for their subsequent use was rationalized throughout. The ethical framework and limitations of the study were also discussed. The following chapter will present and discuss the findings of the research.

Chapter Four: Findings, Analysis and Discussion of results

Introduction

This chapter presents and discusses the findings that emerged from the individual interviews and questionnaires on the perceptions, strategies and challenges faced by primary school teachers in including children with dyspraxia in mainstream classrooms. These findings are presented under three themes: Teacher understanding and awareness of dyspraxia, strategies implemented by teachers who include children with dyspraxia and the challenges faced by such teachers. Additionally, within each theme, there are further sub-themes. The significance of the findings will be examined in relation to the research literature discussed in chapter two, and the similarities and differences between the two will be further highlighted.

Teacher awareness and understanding

Inclusive education. Question one of the interviews asked for the participants' perception of what the term inclusive education means, the context for this question is rooted in the inclusive journey in Ireland, as highlighted in the literature review. As circular 0013 / 17 (DES, 2017) stipulates, inclusion in mainstream classes, is the responsibility of all teachers. Both participants in the current study viewed inclusive education as including all children in the school regardless of ability or difference, supporting them and allowing them to be part of the school community. “ Well my understanding of inclusive education is where all children regardless of their ability or if they have learning difficulties or disabilities can go to a mainstream school and in which, they're fully supported by the whole school community” (T1).

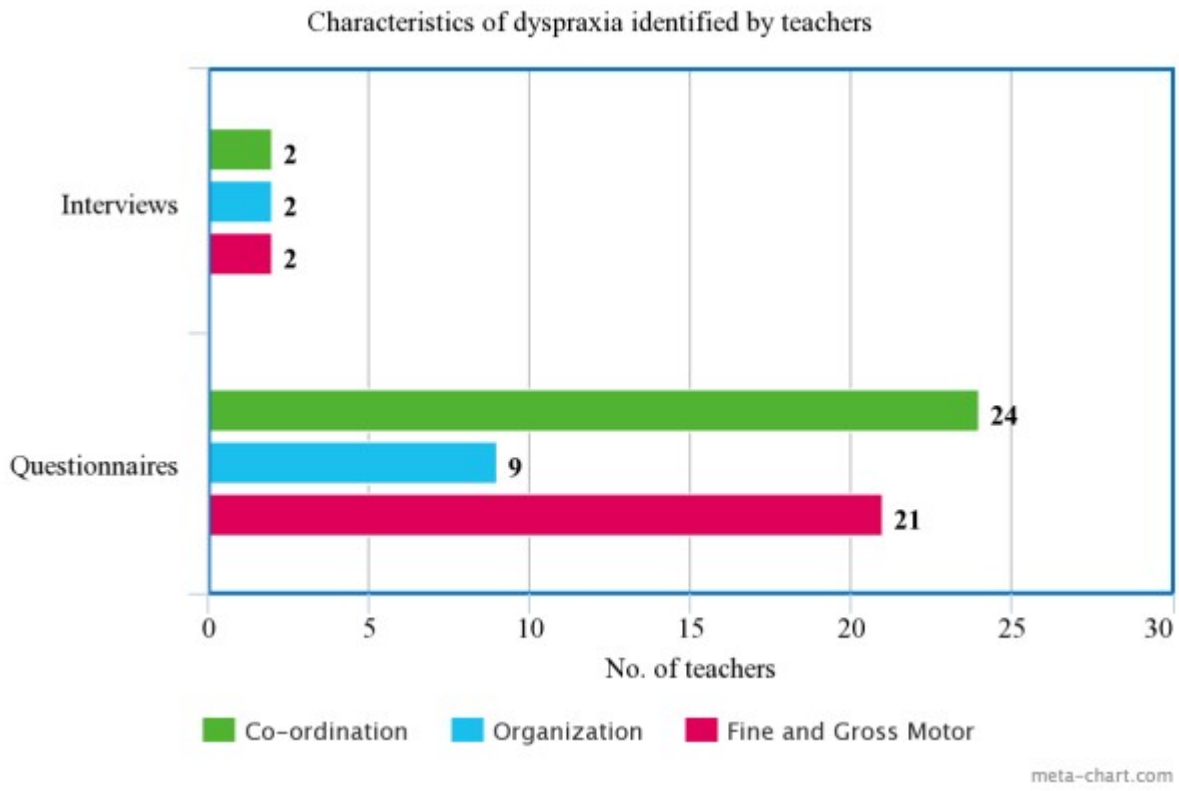
> So, my understanding of it [Inclusive Education] is just being aware of all of the differences that the children in the class have. Like that they all come from different social and economic backgrounds, different religions, have different learning needs and I suppose just creating an environment where you treat them all the same and support them (T2).

These findings correspond with the definition of inclusive education as described by the NCSE (2011) who stated that inclusion is a process of addressing and responding to the diversity of needs of learners. It involves removing barriers so that each learner will be enabled to achieve the maximum benefit from his/her schooling. These findings revealed that both participants had an accurate understanding of the meaning of inclusive education. Additionally, T1 highlighted the positive impact inclusive education can have on the whole class and school saying that "it's something that will stand to all children as they get older and learn that being different or standing out among the crowd is a good thing and that we are there to help". Here, the author draws on the Piagetian lens to reflect on the inclusivity of the modern classroom, one where active learning is advocated. T1 mentioned that the teachers are there to help. As stated by NCSE (2011), differentiation can include a variety of activities, pedagogy and classroom management and organization to suit the needs of the children. Commonly, this can include the use of hands-on, active learning environments in which is an area of difficulty for children with dyspraxia. Therefore, an adequate understanding and knowledge of inclusive education can benefit teachers' ability to incorporate inclusive strategies. Something that is highlighted by Anastasiadis et al (2016) who stipulates that teachers ability to identify and assess children with difficulties is paramount to appropriate interventional strategies.

Contrary to the results of this study, a study conducted by Sucuoğlu, Bakkaloğlu, Karasu, Demir, Şeyma, & Akalın (2013) on teachers' knowledge of inclusive education revealed that teachers had an insufficient understanding of inclusion. However, this study was conducted on preschool teachers and the current investigation is based on primary school teachers currently practising in Ireland. Furthermore, this study was conducted in Turkey, a different geographical location to this research.

Understanding of dyspraxia. Question one of the questionnaires and question two of the interview sought to identify whether teachers were aware of what the term dyspraxia meant. Question two of the questionnaire and question three of the interview aimed to determine if the teachers could identify the characteristics of dyspraxia. The research findings and data analysis found that 100% (n = 38) of participants who completed the questionnaire and both interviewees were familiar with the term dyspraxia, a specific learning difficulty. T1 stated that “it is a condition affecting a child's physical coordination and motor skills” and T2 said dyspraxia “affects a child's fine and gross motor skills and they would have difficulty following instructions”.

Figure 2:



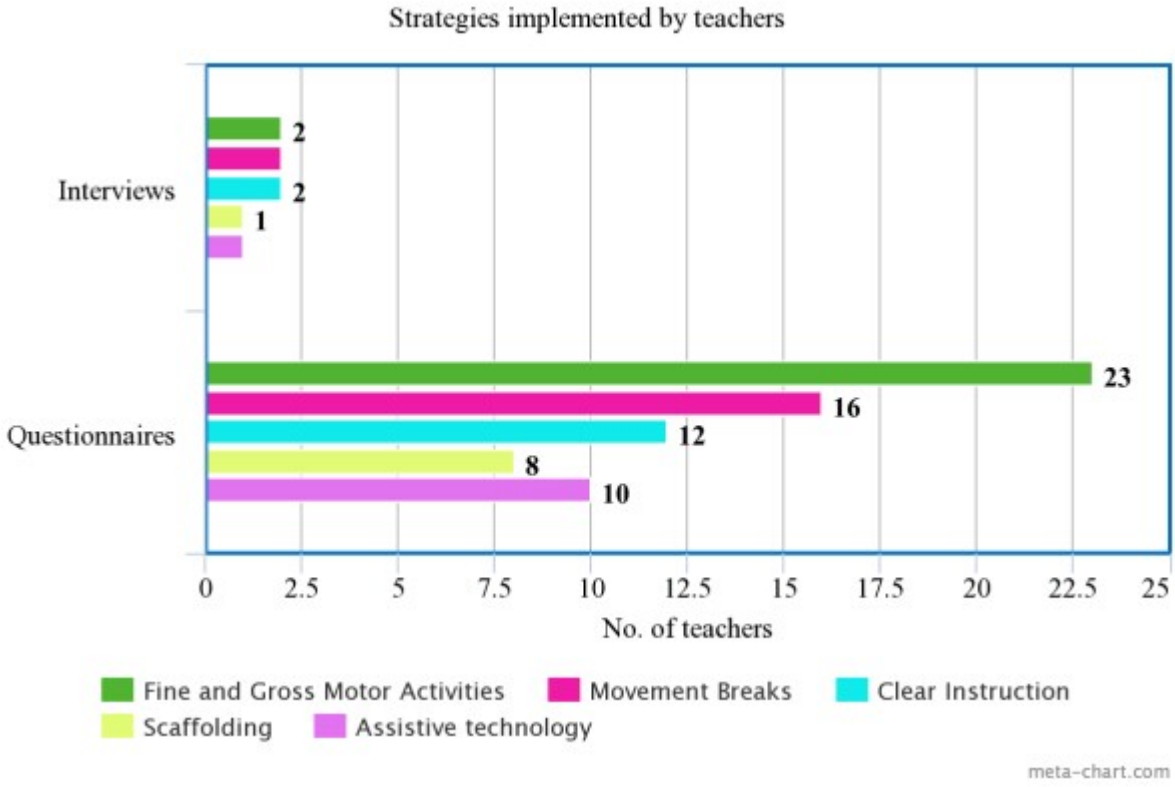
As seen in figure 2, the most common characteristics of dyspraxia identified by the research participants were difficulties with co-ordination, organization and fine and gross motor difficulties. 13.5% (n=5) participants failed to recognize the above three as characteristics of dyspraxia instead, they gave more generalized answers such as problems with day to day activities. The interviews also identified a significant understanding of the characteristics of dyspraxia like the results yielded by the questionnaire. Both participants emphasized a lack of fine and gross motor skills while T1 further explained that “it is almost like messages often get lost in transition in their brain”. T2 had a similar interpretation of the characteristics of dyspraxia adding that “they would have difficulty following instructions, have short attention spans and processing speed is usually quite low”. This research study found that all participants were familiar with the term dyspraxia and furthermore highlights a

correlation between the characteristics of dyspraxia as discussed in the research literature. Contrary to these research findings, the DES Statement of Strategy 2016-2018 which sets out to evaluate how well the education service meets the needs of students with dyspraxia which revealed that "The needs of children with dyspraxia are not being met by the Department in several key areas" (Dyspraxia Ireland, 2015, p.1). Firstly, this report found that not all primary teachers have an awareness of dyspraxia and secondly, that there is potential for more work for effective CPD for teachers of pupils with Dyspraxia. However, since the publication of this document Cosán, the national framework for teachers' learning in Ireland announced the development process (2016-2020) which documents an increase in the learning area of inclusion in teacher CPD (The Teaching Council, 2015).

Strategies implemented by teachers

All research participants were asked what professional strategies they implement to support the learning and development of children with dyspraxia. As seen below in figure 3, the most common response was the application and use of fine and gross motor activities in the classroom.

Figure 3:



Fine and gross motor development. A total of 60.52% (n=23) questionnaire respondents specify fine and gross motor activities as an effective strategy. Similar views were also expressed by both interview participants. Participant T1 spoke about their commitment to developing the fine and gross motor skills of children with dyspraxia saying "another excellent strategy for children with dyspraxia is fine and gross motor work. It really is the basis of helping a child with dyspraxia function to the best of their ability". T2 also said "working specifically on developing the fine and gross motor skills can be an effective tool to help children with dyspraxia". Similarly, research suggests that those who have difficulty with motor skills, manipulation of the environment with the same degree of ease as their more coordinated peers is not possible (Piek, Bradbury, Elsley & Tate, 2008) thus further highlighting the importance of developing motor proficiency in children with

dyspraxia. While fine and gross motor development was identified as an effective strategy, the interview also highlighted specific examples. In the questionnaire, three participants, S14, S19 and S25 mentioned the use of scissors and cutting activities to develop the fine motor skills, while S31 suggested giving the child “wide stemmed pens and pencils”. T2 also focused on fine motor skills and spoke about “handwriting or pencil grip”. T2 also made the point that they would “give them little activities to try and develop this such as using playdough, squeezing a tension ball in your hand for a few seconds and releasing. Anything really that is going to strengthen up their muscles”. Similar views were expressed by T1 who spoke in detail about many aspects of fine and gross motor control such as “coordinating the arms and the legs” (T1), “hand-eye coordination” (T1), “developing pencil grip” (T2), Bilateral integration (T1) and “crossing the midline” (T1). T1 paid particular attention to bilateral integration and explained that it means:

> Getting the left side of the body to work smoothly and efficiently with the right side of the body and vice versa. So, it's kind of an indication that the left and right sides of the brain are communicating and sharing information.

When probed about how this could be developed, T1 mentioned “skipping, making snow angels and jumping jacks". It was clear that both interview participants placed exceptional value on fine and gross motor development, something that was also reflected by Kurtz (2007) in the research literature who stated that new motor skills must be practised in order to become strong, fluid and coordinated. Evidence suggests that motor function difficulties may manifest as clumsiness and slow performances of motor skills that interfere with day-to-day activities and thus learning. This is

reflective of Piaget's constructivist theory that described the close association between perceptual learning and the development of physical proficiency. Research supports the findings of this study, suggesting that motor proficiency is somewhat linked to learning. In a study conducted by Lopes et al (2013) results indicated that children of both genders with low motor control had a higher probability of having low academic achievement. This study also indicated that short periods of physical activity and co-ordination movements have a positive impact on concentration and attention. However, the author notes that this study was conducted with a female-only sample and therefore, generalizations cannot be drawn to male counterparts. Additionally, this study was conducted using a shuttle run to investigate motor control, something that could be particularly challenging for children with dyspraxia as it requires the child to have a sufficient level of bilateral integration. The inability to coordinate and control the left and right sides of the body can result in a child who is unable to ascertain where their body is in relation to the space or area that is around them (Davies et al, 2016)

Movement breaks. According to Reilly, Buskist & Gross, (2012) movement breaks are associated with improved brain functioning as well as improved student behaviour. Movement increases the heart rate and stimulates brain function, which facilitates a child's ability to take in information and learn (Stevens-Smith, 2006). When students are inactive for periods longer than 20 minutes, they experience a drop in glucose and oxygen to the brain, resulting in diminished ability to focus, comprehend, and remember (Reilly, Buskist & Gross, 2012). Like the research literature, this investigation found that teachers utilize movement as a strategy to help

children with dyspraxia. When asked about classroom strategies in the questionnaire, a total of 42.10% (n=16) of respondents chose movement breaks as an effective strategy for children with dyspraxia. S1 commented further expressing an interest in the “use of Go-Noodle in the classroom”. Go-noodle is an online resource of interactive activities for children that uses research-based activities designed to be healthy for the body, engaging for the attention, and beneficial to the brain in specific ways (Whitney, 2016). Furthermore, S11 mentioned “Incorporating specific targets from the fundamental movement skills”. This was also reflected in the interviews. When asked what strategies they use in the classroom T2 stated “I personally like to use movement breaks to give the children a rest from constant brain work as I call it. It lets them just relax and refocus and get ready for the next part of the day” Evidently, movement breaks are particularly helpful in regaining focus and concentration, increasing their ability to process new information. T2 commented further by saying that “Movement breaks are good for the whole class, and can actually be beneficial for everyone, especially in between lessons as a transition. Things like go noodle are just brilliant and so much fun”. It was clear that this participant placed a high value on the use of movement breaks as a strategy to help children, especially those with dyspraxia, process new information and refocus. This was also reflected by Reilly, Buskist and Gross (2012) In the research literature who stated that movement can enhance brain functioning, helping students to be more alert and better able to do the complex mental tasks required in classroom learning. However, a study conducted by McMullen, Kulinna & Cothran (2014) found that some teachers dislike movement breaks as they feel the class may become out of control with the noise level and the children out of their seats. However, it must be acknowledged that the latter was a study in an American secondary school so may not reflect the findings of the current

study. Through an analytical lens, the researcher highlights the positive impact movement and the participation in motor activities can have for children with dyspraxia, in particular, their ability to learn. According to Macintyre & McVitty (2004) developing and practicing movement patterns are the foundation stones for more complex skills and also impact on how children confidently approach and complete all learning activities. Therefore, the author asserts the use of movement breaks in the classroom as a successful strategy for children with dyspraxia.

Clear and concise instructions. Another effective strategy identified by participants was the use of clear and simple instructions to assist children with dyspraxia, allowing them to process instruction at a pace that suits them. According to the research, following instruction successfully, requires both the capacity to understand verbal information, but also the ability to transform this information into a procedural format (Brass, Liefooghe, Braem & Houwer, 2017). Similar to the literature, this research found that 31.57% (n=12) of questionnaire respondents identified giving children clear and concise instructions an effective strategy. Furthermore, S16 and S22 mentioned the use of repetition when giving the children instructions to allow them to process them properly. While S23 and S26 suggested "breaking the steps down into numbered steps". Clear and concise instruction was also referred to as an effective strategy in both interviews. T1 commented saying that "I think the child needs to be aware of what they're being asked to do or what they have to do next. The instruction for a child with dyspraxia needs to be concise, simply worded and sequential". With regards to giving the child clear and concise instruction T2 said that they "would just explain things very clearly and slowly, allowing the

child time to process the information and take note of it in their own heads". Similarly, in the questionnaire S6 said that "it allows them extra time to articulate their thoughts". It is evident that a large number of participants placed high value on giving children with dyspraxia clear and simple instructions, something that was also reflected by Murray et al (2009) in the research literature who stated that children with dyspraxia do not usually have problems with understanding or knowledge required to undertake an activity but rather with the processing of information, the ability to make a motor plan and the organization to complete it.

Challenges for teachers

Class size. The findings of this investigation revealed that attitudes towards the inclusion of children with dyspraxia were predominantly positive. T1 said that "it allows these children to be part of the community and develop a sense of belonging, and ultimately, it provides a better opportunity for learning". However, this study also found that the reality of including and supporting children with dyspraxia in mainstream classrooms can be challenging for teachers. Exploration of these challenges was essential in order to determine the reality of including children with dyspraxia in the classroom.

One finding that was identified by 50% (n=19) of questionnaire respondents and both Interviewee's was class size. The participants indicated that "with 25 plus students in the class, the time needed to adequately help those who are in need of extra support are not available" (S10). While S11 noted that it's impossible to meet the needs of all pupils``. Similar views and experiences were expressed by T1 and T2. T1 claims that the challenge with class size lies in "not being able to focus on the

specific difficulties for any individual child". Similarly, T2 commented on class size expressing a sheer concern for the children saying that "Class size is way too high and it just makes the job a lot more difficult in terms of meeting the needs of all the children in the class especially children experiencing difficulty such as children with dyspraxia". It cannot be denied that participants' concerns are consistent with research, which outlines the impact of class size on teachers. As discussed in the research literature in chapter two, class sizes in Ireland remain well above the EU and OECD average (INTO, 2019). As identified in the research literature, class sizes have a huge impact on children's learning with evidence showing that in smaller classes learning outcomes significantly improve (INTO, 2019). This was also reflected in the study conducted by Kelleher and Weir (2010) who compared class size in Ireland to class size in other countries and found that Ireland, although significant progress had been made in reducing class size, was still above EU and OECD average. Although a significant finding, it is important to note that this study is 10 years old and so may not reflect the current statistical figures. While class size has remained constant, the number of teaching teachers has increased significantly, resulting in a lower overall pupil teacher ratio, which is the number of pupils per teacher in the school (DES, 2019).

Resources. A lack of resources also emerged as a prominent finding in research analysis. A total of 42.10 % (n=16) of respondents identified a lack of resources as a challenge faced by teachers and a further 18.2 % (n=7), identified a lack of funding, in terms of accessing resources to be a challenge for teachers. As discussed in chapter two, both a lack of funding and lack of resources are closely linked and have a huge

impact on the inclusivity of the modern classroom. According to Schwab, Alnahdi, Goldan & Elhadi (2020), there has been an increase in the number of children with SEN in Europe. However, this increase has not been accompanied by a similar level of progress in the provision of resources. Additionally, Wang (2009) stated that sufficient resources would have to be allocated to support the learning of children with difficulties. This is also reflected in the interviews. When asked about what challenges teachers face while helping to support children with dyspraxia, T1 stated that "there may be lots of resources in the school but they might not always be easily accessible" while T2 commented saying that "extra resources in lessons can have a huge impact in terms of helping them focus and process new information". The research also revealed that not only having resources, however, the type of resources available also play a huge role for children with dyspraxia. T1 said that:

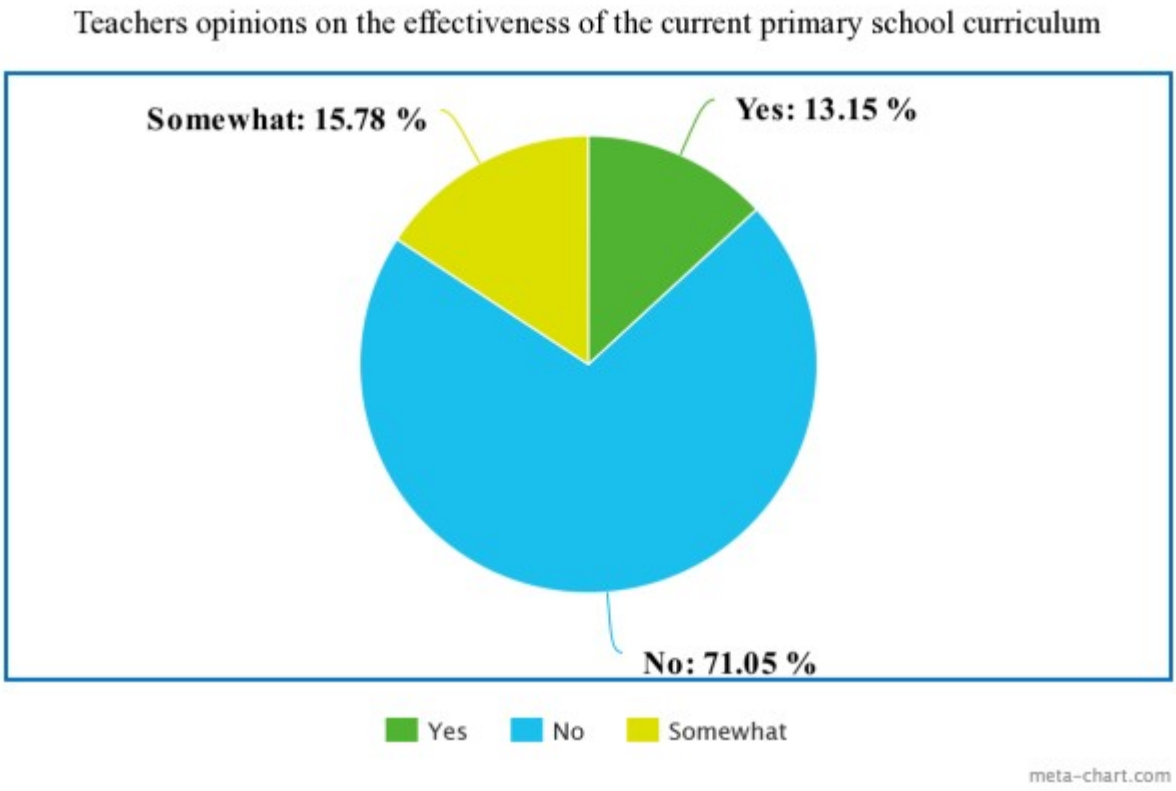
> In my experience, children with dyspraxia benefit hugely from hands-on active learning scenarios, for example, multi-sensory letter formation on things like sandpaper, rice trays and feely bags. Another good one is using the body to teach phonics or anything sensory really.

T2 commented further on the resource type, stating "Children with dyspraxia need to learn using a multi-sensory, hands-on approach, using a variety of classroom materials to take their learning from abstract to concrete". This is mirrored in Piaget's constructivist theory where hands-on learning experiences are advocated to enhance learning (Wood, 2008). What is evident from the current study is that, this approach is necessary to support children with dyspraxia. When probed, T2 also stated that "the use of assistive technology or ICT (Information and Communications Technology) would be beneficial for children with dyspraxia". The use of ICT or assistive

technology was also reflected in the questionnaire. 28.94% (n=11) of respondents identified the use of ICT or assistive technology as an effective strategy for children with dyspraxia. This underlines teachers' ability to work inclusively, while using a variety of necessary resources. This may see a shift in emphasis from the more didactic teacher-led methods to more student-centred discovery, constructivist or hands-on active learning (Shevlin, Kearns, Ranaghan, Twomey, Smith, & Winter, 2009). This investigation highlights the need for appropriate access to resources. However, a study conducted by the OECD (2013) Found that an average of around 80% of students across OECD countries attend schools with inadequate resources. Furthermore, this study found that the school's capacity to provide instruction was not hindered at all or hindered very little by a shortage or inadequacy of instructional materials or resources. What must be acknowledged , is that this study does not incorporate an Irish perspective and therefore, the results cannot be generalized. Contrary to these OECD findings, the DES statement strategy (2016-2018) identifies the importance of accessing motor skill resources and equipment to support children with dyspraxia.

An inclusive curriculum.

Figure 4:



The first part of the questionnaire asked respondents if they believed the current Irish primary curriculum supported children with SEN including dyspraxia. As seen above in figure 4, the findings were mixed revealing that only 13.15% (n= 5) of respondents believe the curriculum is adequate, while 71.05% (n=27) of respondents think that the current curriculum is not sufficient in supporting children with dyspraxia. Furthermore, figure 4 shows that 15.78% (n=6) of respondents said that the current Irish primary curriculum somewhat supports the development of children with dyspraxia. Out of those who said somewhat, three participants mentioned the new primary language curriculum saying that it "offered more support"(S11), "opened things up a lot" (S5) and that it was "a move towards a universal design"(S9). S9 also commented saying that "it is up to the teacher to differentiate if needed" while S6 explained that "it is up to the teacher to cater for the needs of the child". It is

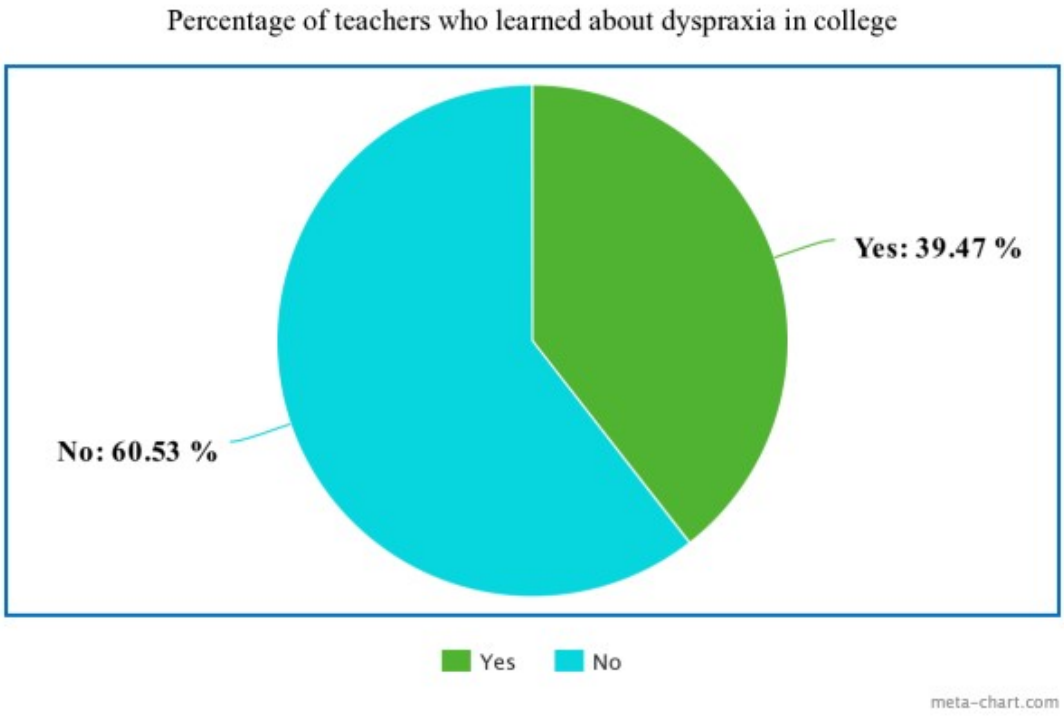
noteworthy to identify research that outlines the need for differentiation and additional resources to adequately meet the needs of those who require extra help (NCSE, 2010).

Similar to the questionnaire, both interviews heralded mixed views on the extent to which the curriculum supports children with SEN. T1 suggested that “the curriculum is quite overloaded” and also stated that “for a child with dyspraxia, there needs to be a focus on life skills and daily functioning activities as well as the academic work and that just isn't in the current curriculum” (T1). Here, the author reflects upon the Piagetian theoretical lens which suggests that children learn best when they are active and using hands-on concrete materials. T2 did not specify whether the curriculum adequately supports children with SEN however, suggested that there is room for improvement. Furthermore, they proposed that “the curriculum is there as a guide and it is up to the teacher to implement differentiation and various other modes of assistance where necessary” (T2). T2 stated that “The spiral nature of the curriculum is very useful for children but especially children with learning difficulties". Although findings showed varying opinions, the findings were consistent with the research literature in terms of teachers recognizing the need to use a combination of the curriculum with differentiation and additional resources (Ware et al, 2011).

Teacher training. As discussed in chapter two, there are huge pressures placed on teachers in today's education system however, teachers are recognized as key to implement inclusive practices in the classroom (De Boer et al, 2011). According to NCSE (2019), this included the mandatory inclusion of modules on

inclusive education and differentiation. However, question 3 of the questionnaire asked whether respondents had learned about dyspraxia in college. As seen below in figure 5, 60.53% (n=23) of respondents answered no. This figure stands as a correlation to dyspraxia being described as a hidden problem (Gibbs et al, 2007; Zwicker at al, 2012; Pedro & Goldschmidt, 2019).

Figure 5:



This discrepancy between the reality of dyspraxia in the classroom and teacher training was also highlighted in the interviews. When asked whether they felt teacher training reflects the reality of dyspraxia in the classroom T1 said:

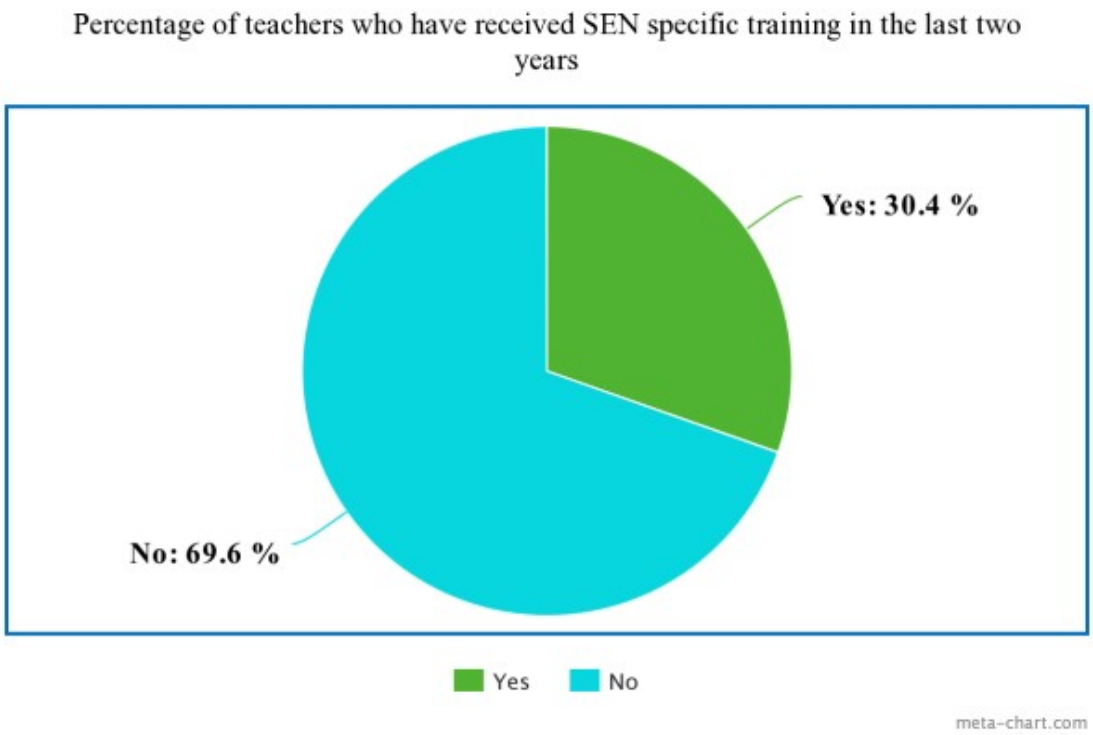
> I would probably go as far as saying that a large volume of what I have learned, has been in the classroom, and through years of teaching and learning and trying new strategies and implementing new ideas

> and ways of managing children with learning difficulties and all of that is really where my understanding and knowledge comes from.

T2 had a similar opinion saying that "dyspraxia is not something I remember learning about in college anyways. It was definitely a case of learning on the job for me". Similar to both participants, the ITE4I report conducted by the NCSE (2019) found that the most important influence on the development of inclusive teachers is their experience in school, both as student teachers and as NQTs. However, the author notes that T1 has over 35 years teaching experience and therefore, it must be acknowledged that the introduction of SEN modules only occurred in 2012 (Hick et al, 2018) thus, suggesting that inclusion modules may not have been available at that time.

Continued professional development.

Figure 6:



As discussed in chapter two, CPD is also important for teachers' ability to be inclusive. CPD is concerned with the maintenance of quality and competence and furthermore, an illustration of lifelong learning (McMillan, McConnell & O'Sullivan, 2016). Question four asked participants if they had accessed any SEN specific training within the last two years. As seen above in figure 6, 69.6% (n=30) of participants answered no, thus meaning only 30.4% (n=8) of participants have accessed SEN training in the last two years. Upon further analysis, it was noted that out of those who answered yes only two, S19 and S23 specified the type of training they received revealing that it was on "ASD (Autism Spectrum Disorder) and dyslexia" (S19) and "dyslexia" (S23). Therefore, this suggests that teachers may need access to further SEN training in order to broaden their knowledge and contribute to the production of inclusive classrooms. Furthermore, it must be noted that Cosán, the national framework for teachers' learning has provided materials to support schools in self-facilitating workshops around professional learning (The Teaching Council, 2015). However, it is also noted

by the researcher that these online materials are not specific to SEN and inclusion thus suggesting that teachers may need to access further continued professional development outside school hours.

Chapter Five: Conclusions and Recommendations

Introduction

Using a mixed method research approach, this research sought to investigate the inclusion of children with dyspraxia in the mainstream classroom. Specifically, this investigation focused on the perceptions, strategies and challenges faced by primary school teachers who teach children with dyspraxia in their classrooms. This chapter outlines the conclusions of the study and presents some recommendations based on the findings.

Summary of findings

Inclusive education is addressing the needs of all learners and removing barriers so they can reach their full educational potential (Ware et al, 2011). In correlation, this study found that all teachers had an adequate understanding of inclusive education, which can benefit their ability to be inclusive. This study also found that all participants were familiar with dyspraxia. Additionally, this study found that the most common characteristics of dyspraxia, as identified by participants, were difficulties with coordination, organization and fine and gross motor activities.

All participants indicated the implementation of strategies as an effective tool for including children with dyspraxia. The most common strategy was the development of fine and gross motor skills. Supporting this finding was a study conducted by Lopes et al (2013) who stated that motor proficiency is linked to learning. Participants also felt that the use of movement breaks in the classroom are good for retaining the attention and concentration of children with dyspraxia. This was associated with the child's ability to learn and complete complexe classroom tasks (Reilly, Buskit & Gross, 2012). Next, this study found that clear and concise instructions that are broken down into one step sequences help children with dyspraxia process new information. It was clear that the value and benefit seen with the use of various strategies helped teachers feel more confident in their ability to cater for the needs of the children.

Although participants' attitudes and understanding towards the inclusion of children with dyspraxia were positive, a number of challenges also emerged, primarily: class size, a lack of resources, the curriculum, training and CPD. The large class size makes it continuously difficult for teachers to meet the needs of all children. However, this is further impacted by a lack of resources. Teachers need access to resources in order to provide a multi-sensory approach to learning, which is advocated by Piaget's constructivist theory. Additionally, this research found that participants highly valued learning in the classroom environment. However, many teachers reported not learning about dyspraxia in college and therefore, it is imperative that teachers receive more access to CPD.

Recommendations

This research found that there are levels of uncertainty associated with dyspraxia and the implementation of inclusive practices within the education system. Therefore, this research makes the following recommendations:

Recommendations for policy makers.

This study recommends that the deferred EPSEN Act be implemented sooner than proposed as this would promote inclusion by ensuring all individual needs are catered for.

The DES should issue a circular stipulating that teachers should be given the time to access training in relation to SEN over the course of the school year and sub teachers be allocated to support this initiative.

The NCCA should issue guidelines in line with the new revised curriculum identifying how to support children with SEN in mainstream classes.

Recommendations for schools.

Specific hours should be allocated for teachers to access training on SEN and inclusion during the school year with sub teachers provided to cover the class times. This would ensure that teachers are able to meet the needs of all individual children.

Research Recommendations.

Further research into the similarities and differences between dyspraxia and DCD would be insightful as this study found a discrepancy between the two.

This research also recommends widening the study to include a cohort of children with dyspraxia. This would allow teachers to see if the strategies they implement are helpful, from the perspective of the child.

Conclusion

This chapter confirms the findings of this study. These findings highlight the need for changes to occur, within the Irish education system, in order to better support teachers and ultimately, provide better learning experiences for children with dyspraxia. Through a recognition of the challenges faced by teachers, changes can be made in order to ensure that the needs of children with dyspraxia are being met in an educational context.

References

Addy, L. M. (2003). *How to understand and support children with dyspraxia*. Lda.

American Psychiatric Association. (2013) . *Diagnostic and statistical manual of mental disorders (5th ed .)* . Arlington, VA: American Psychiatric Publishing

Anastasiadis, M., Kourtessis, T., Zisi, V., & Kioumourtzoglou, E. (2016). Knowledge of elementary school educators in Cyprus regarding developmental coordination disorder in childhood. *Journal of Physical Activity, Nutrition and Rehabilitation*, August, 12.

Armstrong, D. (2005). Reinventing 'inclusion': New Labour and the cultural politics of special education. *Oxford Review of Education*, 31(1), 135-151.

Blake, B. (2015). *Developmental psychology: Incorporating Piaget's and Vygotsky's theories in classrooms*.

Brass, M., Liefooghe, B., Braem, S., & De Houwer, J. (2017). Following new task instructions: Evidence for a dissociation between knowing and doing. *Neuroscience & Biobehavioral Reviews,* 81, 16-28.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.

Caçola, P. (2016). Physical and mental health of children with developmental coordination disorder. *Frontiers in public health*, 4, 224.

Clarke, V., Braun, V., & Hayfield, N. (2015). *Thematic analysis. Qualitative psychology*: A practical guide to research methods, 222-248.

Cohen, L. Manion. L., & Morrison, K.(2007). *Research methods in education*, 5.

Cohen, L., Manion, L., & Morrison, K. (2011). *Planning educational research. Research methods in education.* New York: Routledge Editors.

Cohen, L., Manion, L., & Morrison, K. (2013). *Research methods in education.* routledge.

Colum, M., and McIntyre, K. (2019). Exploring Social Inclusion as a Factor for the Academic Achievement of Students Presenting with Special Educational Needs (SEN) in Schools: A Literature Review. *REACH journal of Special Educational Needs*, 32(1), 21–32.

Costini, O., Roy, A., Remigereau, C., Faure, S., & Le Gall, D. (2015). *Developmental dyspraxia: Symptom or real "dys" disorder?* doi:https://doi.org/10.1016/j.rehab.2015.07.067

Creswell, J. W. (2003). *Research Design: Qualitative. Quantitative, and mixed methods.*

Creswell, J. W. (2011). *Controversies in mixed methods research. The Sage handbook of qualitative research*, 4, 269-284.

Creswell, J. W. (2014). *A concise introduction to mixed methods researc*h. SAGE publications.

Dawson, C. (2019). *Introduction to Research Methods 5th Edition: A Practical Guide for Anyone Undertaking a Research Project.* Hachette UK.

Davies, C., Healy, M., & Smith, D. (2016). *The Maze of Learning Developing Motor Skills. London:* Fit 2 Learn.

Davies, J., & Garner, P. (1997). The views of newly qualified teachers concerning SEN provision in ITE courses. *At the crossroads: Special educational needs and teacher education*. London: David Fulton Publishers.

De Boer, A., Pijl, S. J., & Minnaert, A. (2011). Regular primary schoolteachers' attitudes towards inclusive education: A review of the literature. *International Journal of Inclusive Education*, 15(3), 331-353. doi:10.1080/13603110903030089

Denscombe, M. (2010). The good research guide for small social research projects.

Department of Education and Science. (1978). *Special education needs, the warnock report.* London: HMSO.

Department of Education and Skills. (1993). *Report of the special education review committee.* Dublin: Stationary Office

Department of Education and Skills. (2017). *Circular to the management authorities of all mainstream primary schools special education teaching allocation*. Dublin: Stationary Office.

Department of Education and Skills. (2019). Minister for Education and Skills Launches Primary Language Curriculum/Curaclam Teanga na Bunscoile for all stages in all primary schools. (2019 Press Releases). Retrieved from https://www.education.ie/en/Press-Events/Press-Releases/2019-press-releases/PR19-09-13.html

Dyspraxia Ireland. (2015). *Department of Education and Skills Statement of Strategy 2016-2018 Consultation:*. Dublin. Retrieved from

https://www.education.ie/en/The-Department/Action-Plan-for-Education-2016-2019/Submissions/Dyspraxia-Ireland.pdf

Phd, D. D., & Wilson, B. N. (2001). Developmental coordination disorder: What is it?. *Physical & occupational therapy in pediatrics*, 20(2-3), 5-27.

Engel-Yeger, B., Hanna-Kassis, A., & Rosenblum, S. (2012). *Can gymnastic teacher predict leisure activity preference among children with developmental coordination disorders (DCD)?* doi:https://doi.org/10.1016/j.ridd.2012.01.005

Farmer, M., Echenne, B., & Bentourkia, M. (2016). *Study of clinical characteristics in young subjects with developmental coordination disorder* doi:https://doi.org/10.1016/j.braindev.2015.12.010

Gibbs, J., Appleton, J., & Appleton, R. (2007). Dyspraxia or developmental coordination disorder? Unravelling the enigma. *Archives of disease in childhood,* 92(6), 534–539. https://doi.org/10.1136/adc.2005.088054

Government of Ireland (1937). *Bunreacht na hEirean.*, Dublin: Stationary Office.

Government of Ireland. (1998). *Education act, 2000.* Dublin: Stationary Office

Government of Ireland. (2000). *Equal status act. Irish statute book*. Retrieved from http://www.irishstatutebook.ie/eli/2000/act/8/enacted/en/html.

Government of Ireland. (2004). *Education for persons with special educational needs act, 2004*. Dublin: Stationery Office.

Government of Ireland. (2005). *Disability act, 2005. Irish statute book*. Retrieved from http://www.irishstatutebook.ie/eli/2005/act/14/enacted/en/html

Green, D ., Baird, G ., & Sugden, D . (2006) . A pilot study of psychopathology in developmental coordination disorder . *Child: Care, Health and Development,* 32(6), 741–750 . https://doi .org/10 .1111/j .1365-2214 .2006 .00684

Griffin, S., & Shevlin, M. (2007). *Responding to special needs education: An Irish perspective*. Dublin: Gill & Macmillan

Gross, J., (2002). *Special Educational Needs in the Primary School, A practical Guide*, Philadephia: Open University Press.

Hands, B. P., & Larkin, D. (2001). Developmental coordination disorder: A discrete disability. *New Zealand Journal of Disability Studies*, (9).

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. Evidence-based nursing, 18(3), 66-67.

Hick, P., Solomon, Y., Mintz, J., Matziari, A., Ó Murchú, F., Hall, K., ... & Margariti, D. (2018). Initial Teacher Education for Inclusion Phase 1 and 2 Report: NCSE Research Report No. 26.

The Irish National Teachers' Organisation. (2019). Irish National Teachers Organization: Class sizes are too high. Retrieved 5 April 2020, from https://www.into.ie/campaign/reduce-class-size/

Kelleher, C., & Weir, S. (2016). Class size and student-teacher ratio at primary level in Ireland and other OECD countries. *The Irish Journal of Education/Iris Eireannach an Oideachais*, 39-60.

King, N., Horrocks, C., & Brooks, J. (2018). *Interviews in qualitative research*. SAGE Publications Limited

Kirby, A., Davies, R., & Bryant, A. (2005). Do teachers know more about specific learning difficulties than general practitioners?. *British Journal of Special Education*, 32(3).

Koifman, J. (2017). Teaching students with specific education needs. *International Journal of Innovation and Research in Educational Sciences*, 4(3), 2349-5219.

Kurtz, L. A. (2007). *Understanding motor skills in children with dyspraxia, ADHD, autism, and other learning disabilities: A guide to improving coordination.* Jessica Kingsley Publishers.

Leatherman1, J. M., & Niemeyer, J. A. (2005). Teachers' attitudes toward inclusion: Factors influencing classroom practice. *Journal of Early Childhood Teacher Education*, 26(1), 23-36.

Lemonnier, E. (2010). Psychopathology in children with dyspraxia. *Archives de pediatrie: organe officiel de la Societe francaise de pediatrie*, *17*(8), 1243-1248.

Lockhart, J., & Law, M. (1994). The effectiveness of a multisensory writing programme for improving cursive writing ability in children with sensorimotor difficulties. *Canadian Journal of Occupational Therapy*, 61(4), 206-214

Lodge, A. and Lynch, K. (Eds). (2004). *Diversity at school*. Dublin: Institute of Public Administration for the Equality Authority.

Lopes, L., Santos, R., Pereira, B., & Lopes, V. P. (2013). Associations between gross motor coordination and academic achievement in elementary school children doi:https://doi.org/10.1016/j.humov.2012.05.005

Macintyre, C., & McVitty, K. (2004). *Movement and learning in the early years: supporting dyspraxia (DCD) and other difficulties.* SAGE.

Macintyre, C. (2015). *Dyspraxia in the early years: Identifying and supporting children with movement difficulties.* Routledge.

May, T. (2001). *Social Research: Issues, Methods and Process* 3rd edition ed.

Mayoh, J., & Onwuegbuzie, A. J. (2015). Toward a conceptualization of mixed methods phenomenological research. *Journal of mixed methods research*, 9(1), 91-107.

McMillan, D. J., McConnell, B., & O'Sullivan, H. (2016). Continuing professional development–why bother? Perceptions and motivations of teachers in Ireland. *Professional development in education*, 42(1), 150-167.

McMullan, J., Kulinna, P., & Cothran, D. (2014). Physical activity opportunities during the school day: Classroom teachers' perceptions of using activity breaks in the classroom. *Journal of Teaching in Physical Education*, 33(4), 511-527.

Miller, N. (2015). *Dyspraxia and its Management (Psychology Revivals*). Psychology Press.

Minou, T. (2011). New trends in education of children with disabilities. *Procedia-Social and Behavioral Sciences*, 15, 1955-1959.

Missiuna, C., Moll, S., Law, M., King, S., & King, G. (2006). Mysteries and mazes: Parents' experiences of children with developmental coordination disorder. *Canadian Journal of Occupational Therapy*, 73(1), 7-17.

Murray, M., Baker, P. H., Murray-Slutsky, C., & Paris, B. (2009). Strategies for supporting the sensory-based learner. *Preventing school failure: alternative education for children and Youth*, 53(4), 245-252.

National Council for Special Education, (2010). *Literature Review of the Principles and Practices Relating to Inclusive Education for Children with Special Educational Needs*. NCSE. Retrieved from https://ncse.ie/wp-content/uploads/2014/10/NCSE_Inclusion.pdf

National Council for Special Education. (2011). Inclusive Education Framework - A for schools on the inclusion of pupils with special educational needs. NCSE. Retrieved from https://ncse.ie/wp-content/uploads/2014/10/InclusiveEducationFramework_1.pdf

National Council for Special Education (2013). *Choosing a school: A guide for parents and guardians of children and young people with special educational needs.* NCSE. Retrieved from https://ncse.ie/wp-content/uploads/2014/10/Choosing_School_11_08_13W_060913.pdf

National Council for Special Education. (2014). *Children with Special Educational Needs. Information Booklet for Parents.* NCSE. Retrieved from https://ncse.ie/wp-content/uploads/2014/10/ChildrenWithSpecialEdNeeds1.pdf

National Council for Special Education. (2015). Annual Report 2015. NCSE. Retrieved from https://ncse.ie/wp-content/uploads/2016/08/National-Council-for-Special-Education-Annual-Report-2015.pdf

National Council for Special Education (2017). *Annual Report 2016*. NCSE. Retrieved from https://ncse.ie/wp-content/uploads/2017/08/NCSE-Annual-Report-2016.pdf

National Council for Special Education. (2019). *Initial Teacher Education for Inclusion. Final Report to the National Council for Special Education*. NCSE. Retrieved from https://ncse.ie/wp-content/uploads/2019/12/04611-NCSE-Teacher-Training-RR-Proof05.pdf

Newman, T. (n.d.). What is Dyspraxia?. MedicalNewsToday. Retrieved from https://www.medicalnewstoday.com/articles/151951.

Organisation for Economic Co-operation and Development. (2013). PISA 2012 results: What makes schools successful? Resources, policies and practices (volume IV).

OECD. (2019). Education at a glance 2019 (summary in english) doi:https://doi.org/https://doi.org/10.1787/cf3c1241-en

Organisation, W. (1992). The ICD-10 classification of mental and behavioural disorders. Clinical descriptions and diagnostic guidelines. *World Health Organisation*, Geneva.

Pedro, A., & Goldschmidt, T. (2019). Managing dyspraxia: Pre-school teachers' perceptions, experiences and strategies. J*ournal of Psychology in Africa*, 29(2), 182-186.

Peters, J., Barnett, A. & Henderson, S. E. (2001) 'Clumsy, dyspraxia and developmental coordination disorder: same or different? How do health and educational professionals in the UK define the terms?', Child Care, Health and Development

Piek, J. P., Bradbury, G. S., Elsley, S. C., & Tate, L. (2008). Motor coordination and social–emotional behaviour in preschool-aged children. *International journal of disability, development and education*, 55(2), 143-151.

Portwood, M. (2013). Understanding developmental dyspraxia: A textbook for students and professionals. Routledge.

Punch, K. (2006). *Developing effective research proposals*. London: Sage.

Reilly, E., Buskist, C., & Gross, M. K. (2012). Movement in the classroom: Boosting brain power, fighting obesity. Kappa Delta Pi Record, 48(2), 62- 66.

Richie, J., & Lewis, J. (2003). Qualitative research practice for social scientists and researchers [e-book].

Robertson, S. L. (2002). Teachers' work, restructuring and postfordism: constructing the new 'professionalism'. *In Teachers' professional lives* (pp. 36-63). Routledge.

Sarantakos, S. (2012). *Social research*. Macmillan International Higher Education.

Schwab, S., Alnahdi, G., Goldan, J., & Elhadi, A. (2020a). *Assessing perceptions of resources and inclusive teaching practices: A cross-country study between german and saudi students in inclusive schools* doi:https://doi.org/10.1016/j.stueduc.2020.100849

Sommer Harrits, G. (2011). More than method?: A discussion of paradigm differences within mixed methods research. *Journal of mixed methods research*, 5(2), 150-166.

Shevlin, M., Kearns, H., Ranaghan, M., Twomey, M., Smith, R., & Winter, E. (2009). Creating inclusive learning environments in Irish schools: Teacher perspectives. *The National Council for Special Education.*

Stansell, D. J. (2007). Giving a Face to a Hidden Disorder: The Impact of Dyspraxia. Teaching Exceptional Children Plus, 4(1), n1.

Stevens-Smith, D. A. (2006). *Brain games. Strategies*, 19(6), 19-23.

Sucuoğlu, B., Bakkaloğlu, H., Karasu, F. İ., Demir, Ş., & Akalın, S. (2013). Inclusive preschool teachers: Their attitudes and knowledge about inclusion. International *Journal of Early Childhood Special Education*, 5(2), 107-128.

Sugarman, S. (1990). *Piaget's construction of the child's reality*. Cambridge University Press.

The Institute for Neuro-Physiological Psychology. (n.d.). Retrieved from https://www.inpp.org.uk/intervention-adults-children/help-by-diagnosis/dyspraxia/

Teaching Council. (2015). Self Facilitation Materials. Teaching Council. Retrieved from https://www.teachingcouncil.ie/en/Teacher-Education/Teachers-learning-CPD-/Cosan-Support-Materials/Self-Facilitation-Materials/

Teaching Council. (2011). Policy on the continuum of teacher education. Teaching council. Retrieved from https://www.teachingcouncil.ie/en/Publications/Teacher-Education/Policyon-the-Continuum-of-Teacher-Education.pdf

Teaching Council. (2016). *Annual report. Teaching council*. Retrieved from https://www.teachingcouncil.ie/en/Publications/Annual-Reports/AnnualReport-2006-2007.pdf

Teaching Council. (2016). *Cosán: Framework for Teachers' Learning*. Maynooth: The Teaching Council. Retrieved from http://teachingcouncil.ie/en/Publications/Teacher-Education/CosanFramework-for-Teachers-Learning.pdf

Teaching Council. (2018). *Cosán: Framework for teachers' learning*. Teaching council. Retrieved from https://www.teachingcouncil.ie/en/Publications/Teacher-Education/CosanFramework-for-Teachers-Learning.pdf

Todres, L., & Holloway, I. (2006). Phenomenological research. *The research process in nursing*, 5.

Travers, J., Balfe, T., Butler, C., Day, T., Dupont, M., Mc Daid, R., ... & Prunty, A. (2014). *Addressing the challenges and barriers to inclusion in Irish schools.* Special Education Department, St Patrick's College.

United Nations Convention on the Rights of the Child (1989) (UNCRC).

Valenzuela, D., & Shrivastava, P. (2002). Interview as a method for qualitative research. *Southern Cross University and the Southern Cross Institute of Action Research* (SCIAR).

Walker, E., Shaw, S. C., Price, J., Reed, M., & Anderson, J. (2018). *Dyspraxia in clinical education: a review.* The clinical teacher, 15(2), 98-103.

Wang, H. L. (2009). Should All Students with Special Educational Needs (SEN) Be Included in Mainstream Education Provision?--A Critical Analysis. *International Education Studies*, 2(4), 154-161

Ware, J., Butler, C., Robertson, C., O'Donnell, M., & Gould, M. (2011). Access to the curriculum for pupils with a variety of special educational needs in mainstream classes. *An exploration of the experiences of young pupils in primary school. National Council for Special Education Research Report,* (8).

Whitney, E. A. (2016). Using GoNoodle to Introduce Health Concepts in the K–5 Classroom. Strategies, 29(4), 44–48. doi: 10.1080/08924562.2016.1182368

Wilson, B . N ., Neil, K ., Kamps, P . H ., & Babcock, S . (2013) . Awareness and knowledge of developmental co-ordination disorder among physicians, teachers and parents . *Child: Care, Health and Development*, 39(2), 296–300 . https://doi . org/10 .1111/j .1365-2214 .2012 .01403 .x

Zwicker, J. G., Missiuna, C., Harris, S. R., & Boyd, L. A. (2012). Developmental coordination disorder: a review and update. *European Journal of Paediatric Neurology*, 16(6), 573-581.

Appendix A: Letter of Consent to the Principal

Letter of Consent

Dear Principal,

My name is Siofra Molloy and I am currently in my final year of the professional masters in Education. As part of my final year, I am conducting a research dissertation. My research dissertation is titled “The Inclusion of Children with Dyspraxia in mainstream primary schools”. This research phenomenon seeks to investigate the perceptions, strategies and challenges faced by teachers in your school who attempt to include children with dyspraxia into their classrooms.

I am writing to you to ask your permission to conduct some of my research in your school. My data collection would be in the form of a number of short face to face interviews for any teacher who is willing to participate. My main aim is to gain a deep understanding and insight into the strategies used by teachers to include children with dyspraxia. I intend to interview 2 teachers and the interviews will last approximately 35 to 40 minutes. The interviews will be recorded on a dictaphone, transferred to a password protected laptop, transcribed and then destroyed.

Confidentiality is of utmost importance for this research project. I endeavour to keep all participants personal information anonymous throughout the research process and after the research has been completed. Details of the school and teachers will not be discussed in my findings. All participants have the right to withdraw from the research at any stage without reason.

I would be extremely grateful if you would allow me to conduct this research in your school. If you require any further information in relation to this research project, please do not hesitate to contact me immediately at smolloypme18@momail.mie.ie . I look forward to hearing from you soon.

Kindest Regards,

Siofra Molloy

Appendix B: Letter of Consent to Teachers

Letter of Consent

Dear Teachers,

My name is Siofra Molloy and I am currently in my final year of the Professional Masters in Education (PME). As part of my final year, I am conducting a research dissertation under supervision. My research dissertation is titled "The Inclusion of Children with Dyspraxia in mainstream primary schools. This research phenomenon seeks to investigate the perceptions, strategies and challenges faced by teachers who attempt to include children with dyspraxia into their classrooms.

In order to successfully investigate this research topic I will be conducting qualitative research in the form of interviews. I would very much value your experiences and opinions regarding the inclusion of children with dyspraxia in mainstream settings. My main aim is to gain a deep understanding and insight into the strategies used by teachers to include children with dyspraxia. I want to give participants a safe place to share their experiences while furthering my research investigation. The interviews will last approximately 35 to 40 minutes. The interviews will be recorded on a dictaphone, transferred to a password protected laptop, transcribed and then destroyed.

If you require any further information in relation to this research project, please do not hesitate to contact me immediately at smolloypme18@momail.mie.ie . I look forward to hearing from you soon.

Kindest Regards,

Siofra Molloy

Appendix C: Interview Questions

1. What do you think is meant by the term ‘Inclusive education’?
2. What is your understanding of dyspraxia as a specific learning difficulty?
3. Are you familiar with the characteristics of dyspraxia?
4. What strategies do you use in the classroom to support children with Dyspraxia?.
5. Do you think early intervention is important in terms of development and management of dyspraxia in school and if so what are the benefits?
6. What challenges do teachers have to overcome in order to successfully include children with Dyspraxia in school?
7. Do you think teacher training in Ireland reflects the reality of dyspraxia in the classroom?
8. Do you think children with Dyspraxia benefit from being placed in mainstream education and why?
9. Do you think the current Irish Primary School Curriculum is sufficient in terms of supporting children with dyspraxia in mainstream classrooms?
10. Have you had access to any training specific to special educational needs in the last two years?

Appendix D: Questionnaire Questions

1. How long have you been teaching?
2. Are you familiar with the term dyspraxia?
3. If yes, explain the meaning of the term dyspraxia.
4. Did you learn about dyspraxia in college?
5. Have you accessed any training, specifically related to special educational needs in the last two years?
6. Do you think the current Irish primary curriculum adequately supports children with special educational needs?
7. List 3 professional strategies you would implement to include a child with dyspraxia in your class.
8. As a teacher, what are the challenges of inclusive education?
9. In relation to training, do you feel equipped to support the learning of a child with dyspraxia.