Dyslexic Learners:
An Investigation into the Attitudes and Knowledge of Secondary School Teachers in New Zealand

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Abstract

This dissertation addresses New Zealand secondary school teacher attitudes, knowledge and beliefs surrounding the construct of dyslexia. It focuses on collating data on teacher attitudes towards and awareness of dyslexia, as a significant fissure in research on the subject is apparent in New Zealand. A survey was conducted which examines the nature of teacher attitudes about dyslexia, the extent of teacher knowledge about dyslexic learners in New Zealand, the support provided to learners with dyslexia and the perceived barriers to providing support for dyslexic students.

One hundred and forty-four secondary school teachers of varying ages and with an average of six to nineteen years of experience, from different regions of the nation responded. Seventy-four percent of the participants taught in Auckland. An online questionnaire was employed, querying the degree of knowledge teachers had regarding dyslexia, their perception of the implications of the diagnosis, the general attitude maintained by teachers towards it, and support currently provided when dealing with dyslexic learners. Three open-ended questions were asked about the barriers teachers encountered, additional support and information required and any further comments respondents wished to make regarding dyslexic learners.

While respondents displayed a reasonable degree of awareness about what dyslexia is and were largely positive in their perception of the disability, opinions began to diverge in the open-ended section of the survey. Apart from time being cited as a perceived barrier with dyslexic learners, primarily, it was an absence of knowledge as to what modality of teaching should be employed and the resources that should be used. As a whole, the findings indicate that further support and training is necessary to mitigate the obstacles and confusion experienced by teachers when providing instruction for students with dyslexia.

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Introduction

Statement of the Problem

There is substantial and growing international research into teacher recognition and support for dyslexic learners in mainstream educational settings. Comparatively, our understanding of teacher attitudes and beliefs around learning difficulties and the severity of their impact on a student are limited in New Zealand. According to the Dyslexia Foundation of New Zealand, classroom teachers often have minimal knowledge or understanding of dyslexia (2007). The lack of widespread recognition of the disability means families will continue to encounter difficulties in having their child assessed, having the diagnosis of dyslexia recognised, and consequently having their child supported in schools.

Time-limited examination structures based on the expectation of high levels of literacy (Mortimore & Crozier, 2006) continue to be the *status quo* and exacerbate the sense of failure for a dyslexic student. Numerous educators continue to focus on the typical difficulties experienced - such as delayed reading development and the memorisation of whole words attempting to correct the literacy predicament through memorisation and drill. A well-crafted study could contribute to our understanding of where teachers are currently situated in terms of knowledge and support us in devising strategies that may improve the education of dyslexic students. The adoption of learning strategies specific to dyslexia, and the endorsement of accomplishments in oral, visual or other areas, as signposts of achievement could have a significant influence on educational outcomes for students.

Purpose of the Study

This study attempts to understand the attitudes of a sample of New Zealand secondary school teachers: it determines whether educators' beliefs are situated negatively or positively towards the construct of dyslexia and provides insight into their conception of the disability, the perceived 'helplessness' of a dyslexic student and caregivers' responses to the condition and finally, perceived barriers in terms of supporting these students.

Examining international literature concerning the theories behind dyslexia indicates that it is primarily an educator's attitude that determines the course of a student's behaviour and educational progress. Similarly, international research suggests that a teacher's capacity to deal with different forms of learning difficulties is affected by their knowledge regarding those difficulties (Gwernan-Jones & Burden, 2009). An exploration of this research is given in the literature review. Systematic research is required to establish the extent of teacher knowledge and attitudes towards meeting the needs of adolescents who are affected by dyslexia. By investigating New Zealand teacher attitudes and experiences of teaching adolescents affected by dyslexia, insight may be gained into what support is

currently available and what action is required to best meet the needs of secondary students with dyslexia.

Conducting a study into the current understanding of secondary school teachers about dyslexia is the critical component of this dissertation. The analysis of this data will help inform recommendations about changes that could be made in the public education system and to further education for teachers.

Chapter I

Review of Literature

Section One

The importance of investigating teacher knowledge of and attitudes towards students with dyslexia.

'What teachers know and can do is one of the most important influences on what students learn'

(Darling-Hammond, 1998, p. 6).

The manner in which educators situate themselves in relation to students with dyslexia is critical to the educational and behavioural development of these children. When their teachers cast dyslexic learners in a negative light, it may have adverse ramifications on their future. According to Good and Brophy, (1997) it has long been established that teacher attitudes and expectations can have lasting consequences; particularly in the case of a classroom teacher who holds a less than positive attitude towards students with a disability (cited in Campbell, Gilmore & Cuskelly, 2003). It is well documented that if not properly addressed, dyslexia leads to alienation and disenfranchisement, places youth at risk and potentially fuels depression and anti-social behaviour (Macdonald, 2012; Dyslexia Foundation New Zealand; Becroft, 2004; Sutherland, 2011). Internationally, British, American and Swedish research indicates that 30-52% of the prison population are dyslexic, and there is no reason to suggest that statistics in New Zealand would differ (Becroft, 2004). The writer was unable to locate any New Zealand research on this topic, as local studies are scarce even in relation to the number of dyslexic children attending schools, and even more so, are investigations into the perceived barriers experienced by teaching professionals who are responsible for the learners. The constellation of difficulties categorised as 'dyslexia' in New Zealand warrants further research, due to the detrimental impact the affliction has on the wellbeing of an individual as well as society.

Numerous correlation studies have been conducted, which investigate the relationship between dyslexia, truancy and petty criminal behaviour (Becroft, 2004). Research evidence generally defines the trajectory of the 'route to offending' as beginning with difficulties in the classroom. This devolves into low self-esteem for the individual, loss of emotional attachment, substandard behaviour and social exclusion - culminating in criminal offence (Sutherland, 2011).

To navigate past this negative trajectory, Burden and Jones (2009) emphasise the importance of positive teacher beliefs towards students with dyslexia: 'teachers with a higher degree of self-efficacy were consistently found to be more open to new ideas and more willing to experiment with new methods to meet the needs of their students' (p. 66). This plays a crucial role in students' educational experience and achievement (Campbell et al., 2003). Research also suggests that when teachers have limited access to information, training or support, a sense of learned helplessness (Kerr, 2001) develops in the teacher and learner. This conversely affects the level of support teachers provide for dyslexics (Ade-Ojo, G. O.,

2012) due to the nature of the student - which has been inadvertently cultivated by the instructor. Being well-versed in the signs of dyslexia would allow a teacher to identify its occurrence, and additionally, develop the skills necessary to support a dyslexic child's learning. Dyslexia should not be a condition that disables a learner, nor should it be a condition that disables a teacher in the classroom (Wadlington & Wadlington, 2005).

For students, differing perceptions may be experienced with dyslexia, due to the wide spectrum of the condition. According to Rowan (2010), some may believe it is integral to their identity, burgeoning their creativity and building strength and resilience (p. 75). On the other end of the spectrum, some experience an innate struggle (p. 74). When dyslexia is discussed as a learning disability or disease, blame is attributed to the individual and manifests itself negatively (Kerr, 2001, p. 83). Dyslexia turns a seemingly simple task into a battleground of emotional, mental struggles, inevitably affecting self-esteem and life choices (Rowan, p. 72). Handler explains, operating on the assumption that most students with dyslexia require additional educational support, that students may struggle to succeed academically in a mainstream teaching environment, when demands on a teacher are already high (www.aapos.org). Caregivers must resort to specialists, a therapist or tutor, trained to deliver a structured approach specific to the needs of dyslexia (Moats, 1994) - a costly intervention. However, a child who grows detached through lack of engagement or support could eventually exhibit diminishing self-belief and depression, inevitably causing anxiety and pain for parents (Dyslexia Foundation of New Zealand). But it is the identification of the disability, which is the initial step in terms of contending with dyslexia (McDonald, 2012).

The majority of teachers may not struggle with identifying indicators of dyslexia, although what is required beyond this detection appears to be where the problem begins. Simply having an established diagnosis does not necessarily provide a direct solution for support (literacyonline.tki.org.nz). According to research surrounding areas of literacy development; teacher-knowledge of the English-language system is required in both general and special education teachers (Carreker, Joshi & Gooden, 2010). Knowledge and confidence with teaching, reading and spelling is requisite in recognising specific areas of difficulties and furthermore in developing specific strategies for remediation and success (Carreker, Joshi & Gooden, 2010). Recognition, diagnostic assessment, positive educational experiences and emotional support are all necessary provisions for children with dyslexia; this enables successful and confident learners and adults (www.aapos.org). Many individuals with dyslexia, need one-on-one help, or small groups of similarly-abled peers so that they can move forward at their own pace, thus requiring smaller class sizes to gain the required time and support from the teacher (International Dyslexia Association). Still pressing, are the adverse consequences if dyslexia is not addressed correctly (Shaywitz, 2003; DFNZ; Ryan, M., 2004). In terms of the construct of dyslexia and research into its characteristics, what follows is the examination of historical perspectives,

characteristics, social perceptions and research in relation to educators' attitudes towards dyslexia is essential to this project. Adjzen's 'Theory of Planned Behaviour' has emerged as foundational in this research.

Section Two

Historical perspectives, definitions and characteristics of dyslexia

Literature surrounding the history of reading disturbances and difficulties has been documented in great depth (Harris, 1980). A common misconception about dyslexia is that it primarily involves reading backwards - which is a common indicator, but only a small part of the continuum (International Dyslexia Association). Despite abundant research (Guardiola, 2001) defining dyslexia continues to be a complex and challenging process, providing no single, fixed definition (International Dyslexia Association).

The origins of dyslexia in scientific literature date back to Pierre Paul Broca's (1861, 1865) findings, in which he identified the specific cerebral region where language functions potentially reside (Guardiola, 2001). This area of the brain now referred to as the Broca area, and in modern science, is recognised as being responsible for learning language-based skills and speech production (Shaywitz, 2008). The 'Case Study of Congenital Word Blindness' (Morgan, 1896), published by Dr. W. Pringle Morgan, in the *British Medical Journal* (cited in Shaywitz, 2008) is equally significant in the medical history of the disability. This was considered one of the first publications regarding congenial dyslexia (Guardiola, J., 2001). It documented 'children in Victorian society who were bright and motivated, who came from concerned and educated families, and had interested teachers, but who could nevertheless, not learn to read' (Shaywitz, 2008, p.13).

Developmental dyslexia has typically been defined as a difficulty with reading and spelling that cannot be accounted by sensory or neurological damage, lack of educational opportunity, or low cognitive capacity (Stanovich, 1986; Vellutino, 1979). It is important to note that the constellation of difficulties also encompass problems with accurate or fluent word recognition, poor handwriting, difficulties with reading comprehension or math reasoning (Lowell, 2014). However, children with dyslexia are often reported to be bright and able in other intellectual domains (Shaywitz, 2003; Fawcett & Nicolson, 2005, p. 29). This phenomena relates to the 'discrepancy criterion', which has come under attack in recent years (Lucid, 2006; Stanovich, 2005).

Discrepancies of intelligence in measure with ability have been discussed in-depth. This is the 'aptitude-achievement discrepancy' referred to by Stanovich (2005). Siegel (1989) has also argued that 'intelligence should play no part in defining dyslexia' (cited in Fawcett & Nicolson, 2005). According to Kersting (2004), 'in an issue of the *APA Monitor* published in October 2004, a leading figure in learning disability diagnosis, is quoted as saying that the intelligence test is our stethoscope, like it or not' (cited in Stanovich, 2005, p. 103). There is a significant lack of consensus that a learning disorder diagnosis employing intelligence as a proxy for aptitude is useful or conceptually justified (Siegel, 1989, 1992). Stanovich (1989) has pointed out serious conceptual problems that arise from the use of intelligence-based definitions (Rack, Snowling & Olsen, 1992). Countering the Stanovich debate over the legitimate use of the discrepancy criterion, Lucid Research (2006) state, 'nevertheless, in the classroom it is often the case the discrepancy between a pupil's expected levels of attainments (based on judgements of their overall ability) and their actual attainment (especially in reading, writing and spelling) which first draws the teacher's attention to the possibility that the pupil may have dyslexia' (p.8).

Currently, the accepted definition, adopted by the International Dyslexia Association (www.interdys.org) - the leading professional group researching and providing information regarding dyslexia - reads as follows:

> Dyslexia is a specific learning disability that is neurological (a difference in the brain) in origin. It is characterised by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding (sounding words out) abilities. These difficulties typically result from a deficit in the phonological component of language (matching sound(s) and letters) that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instructions. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge.

According to Lucid Research (2006) there is 'little disagreement that the condition is a neurological one, despite multiple theories existing in relation to dyslexia' (p. 3) among them are the 'Phonological Deficit Theory', the 'Cerebellar Deficit Theory' and the 'Magnocellular Deficit Theory'.

The Phonological Deficit theory is the predominant and universally recognised conceptualisation of dyslexia, explaining difficulties dyslexic individuals display in associating sounds with symbols in reading and spelling (MoE Literature Review, 2008; Miles & Miles, 1999). The 'Cerebellar Deficit' and 'Magnocellular Deficit' theories are fringe theories concerning dyslexia and are believed to be of lesser relevance, requiring further research (MoE, 2008, p. 86). The Cerebellar Deficit Theory proposes that the cerebellum is the region of the brain, which facilitates automatic cognition. This theory suggests that in the case of dyslexia, there is a problem in central processing linked to learning and automaticity

(Lucid, 2006). The Magnocellular Deficit Theory suggests that problems arise as a result of visual or auditory deficits (MoE Literature Review, 2008, p. 5).

Integral to fundamental language ability is phonological awareness - widely accepted as being the primary difficulty for a dyslexic learner - a set of skills and explicit understanding of the different ways in which spoken language can be broken down and manipulated (Washburn, Malatesha & Binks-Cantrell, 2011). Phonemic awareness (an aspect of phonological awareness) is the capacity to identify and manipulate individual sounds into words. Phonics is an understanding of how letters (graphemes) are systematically related to spoken sounds (phonemes) and an understanding of how its application in decoding text, dyslexia's nemesis (Adams, 1990; Moats, 1994). Also affecting students with dyslexia is a weakness in morphological awareness, which plays a significant role as children progress through the upper levels of education, understanding of meaningful word parts (affixes, base words, and derivatives) and their role in both reading and spelling (Washburn, et al.).

The array of linguistic difficulties dyslexics encounter requires comprehensive understanding and expertise on the part of educators, to ensure they employ the appropriate intervention strategies (Moats, 2010). Greater intensity and duration of instruction is required because of the increased specificity of instruction for children at risk of reading failure (Torgesen, 2002; Tunmer & Greaney, 2008). An important factor is ensuring that teachers have thorough knowledge of the course of literacy development and access to a wide range of instructional techniques and the necessary knowledge to deploy them (Lowell, 2104).

In the absence of this mode of pedagogy, a teacher's deficit of knowledge in co-occurring factors could contribute to confusion and frustration when trying to work on reading barriers alone. For example, lack of teacher knowledge of characteristics and difficulties experienced as a result of working memory impairment, may cause significant issues, as additional time strategies fail to succeed due to limited retention. The impact on cognitive retention relates to the major co-occurrence between dyslexia and Attention Deficit Hyperactivity Disorder (Bradley, 2008). According to the *MoE Literature Review*: An International Perspective on Dyslexia (2007) co-morbidity factors of students with dyslexia experience symptoms of Attention Deficit Disorder (ADD) or ADHD are said to range within 30 and 70% (p. 57).

The overarching consequences for children and adolescents if the issues remain unaddressed are that they will continue to fail in an institutional sense and this may precipitate social and emotional problems as previously stated (Kirk & Reid, 2001). Returning to the ramifications of the negligence of

or uninformed educators, research data demonstrates that educational and socially recognised accomplishments are key protective factors in prevention of young offenders (Gottfredson 2001; Hirschi 1969; Maughan 1994; Sprott et al., 2000). It is important to reiterate that a number of longitudinal studies substantiate the fact that academically struggling adolescents have a greater propensity towards criminal activity in comparison to those who are performing adequately (e.g. Dishion et al., 1991; Elliot & Voss 1974; Flannery 2000; Seydlitz & Jenkins. 1998). This is supported by evidence that the cognitive function of young offenders is at the low to average range and have significant deficits in reading, written and oral language, and maths compared to their non-offending peers (Leone et al., 2003).

In terms of further definitions, the Dyslexia Foundation of New Zealand states:

> When defining dyslexia, it is important to note that this is best thought of as a continuum of abilities and difficulties, rather than a distinct category. Although, problems can often lie in ways dyslexia is habitually used as a blanket description (some see it as just a label or an excuse) for a collection of learning on a continuum of difficulties. This means that students with dyslexia may experience issues manifested in many different ways, from the well publicised understanding with reading difficulties, writing (dysgraphia) and spelling (Orthographic and Morphological Awareness) through to issues with a much wider (and lesser known) range of co-occurring deficiencies (working memory index, maths and information processing).

Section Three

The New Zealand Government's recognition of dyslexia

Prior to November 2007, recognition of dyslexia as a clinical disorder was absent in the educational field, no training was offered or available for teachers (Bradley-Artis, 2008). The official ministerial response to dyslexia at that time was: 'the Ministry of Education does not wish to develop an education system which defines and categorises students in terms of their learning disabilities, but prefers a system that makes assessments on their needs for additional support…In this regard, the Ministry of Education do not specifically recognise the use of the term dyslexia in the school context because of the issues associated with labelling students, and instead, individual needs are identified and appropriate interventions across a range of learning difficulties are implemented' (MoE literature review 2007, p. 12). Failing to officially legitimise dyslexia as a developmental disorder despite its biological and neurological origins, the Ministry generalised the spectrum of conditions as a 'specific learning disability' (Ministry of Health, 2006) to describe children struggling with literacy problems. Capital was targeted at generic intervention programs to aid the increase of literacy skills (Marshall, 2008). Only after 2007 did the New Zealand government's recognition and policy in terms of dyslexia shift.

By 2008, the Ministry of Education reconfigured its policy, formally recognising dyslexia as a specific learning disability (Marshall, 2008). This was a positive step for children with learning difficulties. Significant amounts of taxpayer money was expended into research on international literature (DFNZ, 2008), as well as the development of online resources for parents and teachers via the Te Kete Ipurangi website (tki.org.nz). The Ministry of Education published 'Breaking Down the Barriers' and redefined '(d)yslexia (a)s a term used to describe a range of persistent difficulties with reading and writing, and often including spelling, numeracy or musical notation' (newzealand.govt.nz, 2008, p. 1). The author wrote, 'by acknowledging and defining "dyslexia" the basis has been set for action to reduce the difficulties faced by students who have persistent difficulties learning to read and write and students identified as dyslexic' (newzealand.govt.nz, 2008, p. 7).

With regard to targeting funding, the Special Education Grant (SEG) was introduced (Marshall, 2008). This continues to be paid directly to schools, assisting in the provision of instructional adaptations to improve the achievements of students with learning difficulties. However, the direction of the funding is at the discretion of each school's management. Resultantly, the variation of actual assistance provided derives from the attitudes and perceptions of those responsible for the distribution of funding (Peer, L & Reid, G., 2001). It is also dependent on the priorities of the institution for the academic year. SEG funding requires careful and realistic allocation, as all needs cannot be met (Marshall, 2008). In terms of the analysis of achievement trends of the newly implemented changes to dyslexia in schools and subsidy, only The Neilson Group survey in 2008 can be located. This scarcity of data makes it difficult to obtain a truly accurate account of how schools actually allocate funding. Despite the Ministry of Education's effort in initial policy stages - their collation of research and provision of website content for parents and teachers of children with dyslexia - they inadequately provide information about realistic measures that help, or that alter the outcomes for students who require additional specialist support (Dyslexic Foundation of New Zealand).

Section Four

What is known about teacher recognition and support for dyslexic learners in New Zealand

In contrast to the laboured policy deliberations of the Ministry of Education, teachers appear to be relatively aware about dyslexia. The Dyslexia Foundation of New Zealand employed The Neilson Group (2008) to design a study with the intention of better understanding education professionals' exposure to dyslexic students, what schools currently do for their dyslexic students, awareness of Government support, need for specific funding and behavioural traits of dyslexic students (Neilson, 2008). Two hundred and forty-six teachers, twenty-six principals, eight teacher aides, fifty-three Resource Teachers of Learning and Behaviour, and fourteen Literacy Resource teachers from across

New Zealand responded to the Neilson's online survey. The degree of response demonstrated the level of recognition of the condition within the educational community, with 94% stating they had taught a dyslexic student and that 77% had used their teaching experience to identify these students (p. 10). Nearly all of the respondents (95%) believed that funding would benefit these learners and 54% of the participants advocated funding specifically targeted towards further education with regard to dyslexia. These responses evince a positive mindset regarding learning, research and development in the educational community. Understanding teacher training in, recognition and support of dyslexia is pivotal in evaluating the treatment of the condition in New Zealand (Williams & Lynch, 2012).

Looking at the statistics of success rates in education, according to international surveys (Progress in International Reading Study), reading abilities of New Zealand children are falling in comparison to their Organisation of Economic Co-operation Development counterparts (Arrow, Chapman, Greaney, Prochnow, & Tunmer, 2013). Professor Chapman says, 'New Zealanders generally do not have as good an understanding of dyslexia as in other countries where the disability has been recognised for decades' (www.massey.ac.nz). Professor Tunmer from Massey University (School of Educational Studies) avers that the Ministry of Education's reading recovery programme is ineffective (Arrow, Chapman, Greaney, Prochnow, & Tunmer, 2013). He argues that certain students are not suited to the programme - particularly those at the highest risk of illiteracy - and that many teachers are not equipped to cope with the challenges; '(t)he teaching of literacy skills is different to other areas of education,' (p. 5). However, effective teaching and support is inextricable from attitudes and beliefs held towards learning disorders (Ajzen, 1985).

A teacher's specific beliefs about dyslexia have numerous implications in a classroom. Teaching is the primary factor that determines if actual learning takes place for students (Ford, 1997; NICHD, 2000; Richardson et al., 1985; Rubin, 2002). Early intervention and treatment are paramount for children who are at risk (Shaywitz, 2003) and as is often the case, those who first identify a problem are educators at school (Wadlington, P. L. & Wadlington, E. M. 2005). Evidence indicates that a flexible teacher possessing the willingness to employ new modalities of teaching with positivity will have an efficacious impact on their students (Gwernan-Jones & Burden, 2009). However, Bos, Mather, Dickson, Podhajski, and Chard (1999) state that general education teachers may not be adequately prepared to teach students with dyslexia. They are emphatic that even special education teachers - to a degree - are insufficiently equipped to effectively instruct children with learning disabilities. Chard (1999) laments that special education teacher programmes have grown increasingly unspecific and unfocussed. He insists that making reading certifications requisite to a special education degree will make a profound difference in the treatment of dyslexia.

Both professionals and parents believe that teacher education programs are lacking in preparing teachers to teach reading (Chard, 1999; Ford, 1997; Richardson, 1996). According to the National Institute of Child Health and Development (2000), many teachers have not had the instruction and experience necessary to develop substantive knowledge about the structure of English language, reading development, and reading difficulties. Rubin (2002), alongside Spear-Swerling and Brucker (2002) argue that teachers themselves, sometimes lack good reading skills and attitudes toward reading, affecting their capacity to teach this core subject. Moats and Lyon (1996) state that teachers do not naturally arrive at an explicit cognisance of linguistic structure simply because they are literate themselves, asserting that teacher knowledge is predictive of their competence in literacy instruction for students with dyslexia. Also examining teacher training, Clark and Uhry (1995) believe that the fact that reading education, special education, and remedial reading education are often treated as three autonomous domains without integration is hugely problematic. Such discrepancies in literacy training and knowledge constrain students' achievement in classes (Carlisle & Andrews, 1993), leading to the social and emotional problems previously discussed (Currie & Wadlington, 2000; Riddick, 1995; Rubin, 2002; Ryan, 1994; Shaywitz, 2003). These situations are exacerbated when parents are not perceived as partners in the educational process of their children (Hunter-Carsch, 2001; Riddick, 1995; Shaywitz, 2003).

When studying beliefs and perspectives, Wadlington and Wadlington (2005) found that numerous groups of educators (primary school teachers, secondary school teachers, special educators, school counsellors, administrators, university faculty) have significant misconceptions about dyslexia. Additionally, many feel inadequate working with students with dyslexia, and profoundly believe learning how to provide effective instruction to these students is a pressing necessity. A potential solution in increasing awareness and education is Reback's (1999) proposal that teacher unions specific to learning disabilities should become involved in teacher education. Wadlington and Wadlington (2005) advocate intensive, hands-on, instructional experience for educators with dyslexic students in their university programmes. In particular, meta-linguistics plays a factor in learning for dyslexics, and this absence of specialist knowledge may be contributing to a struggling percentage of pupils, both in New Zealand and internationally (Carreker, Joshi & Gooden, 2010; PIRLS, 2010; Moats, 2000). Further study in this area could potentially aid students. In summation, teacher education is an ongoing, lifelong process that only begins with initial certification programmes. Experienced teachers' require additional training appropriate to their fields and specific to dealing with learning disorders as their careers progress (National Reading Panel, 2000; Spear-Swerling & Brucker, 2003; Spear-Swerling & Brucker, 2002; Wadlington & Wadlington, 2005).

Still the effective instruction of dyslexic students necessitates more than an abstract knowledge of the disorder; teachers need to be empathetic towards students. Consistently, the effective teachers display empathy, which is intrinsically to linked compassion. Understanding how it feels to experience the learning frustrations a dyslexic faces daily is vital in ameliorating the struggles presented in a classroom context for a learner (Currie & Wadlington, 2000; Jordan, 2002; Ryan, 1994; Wadlington & Wadlington, 2005). Research is required to evaluate teacher attitudes and gauge the extent of their knowledge concerning the support of dyslexic learners in New Zealand. Through qualitative and quantitative investigation into the perspectives and experiences of educators teaching children with dyslexia, insight may be gained into the general stance maintained by the educational community and the support currently available. This enables us to determine what further action and policy changes are required to fulfil the needs of dyslexics in the New Zealand educational system.

Section Five

Theory of Planned Behaviour

There is considerable evidence to support the contention that a person's attitudes towards a particular activity, individual or group will have a significant impact on the manner in which that person or group are likely to behave when required to carry out that activity (Eagly & Chaiken, 1993). The most thoroughly researched theory in this regard has been Icek Ajzen's (1985) Theory of Planned Behaviour (TPB) and provides a useful framework through which to explore teacher attitudes surrounding dyslexia. For Ajzen, intention emerges as a functionary of the ways in which behavioural beliefs and values relate to normative beliefs and compliance, shaping attitudes and subjective norms (Gwerwan-Jones & Burden, 2011).

Developed from Ajzen and Fishbein's (1980) original Theory of Reasoned Action, TPB is based on the premise that intentionality is a key determinant in sociality, governing both actions and social behaviour (Flay & Petraitis, 1994). These intentions are preceded by attitudes, self-efficacy (the perceived ease or difficulty of behavioural performance) and subjective norms (Marcoux & Shope, 1997). Subjective norms are the individual's perception of the social pressure to enact certain behaviours. These norms are comprised of beliefs about how other people - who may have emotional significance - would like them to behave (normative beliefs) and the strength of the individual's desire to attain approval from these other individuals (motivation to comply) (Darker & French, 2009). Generally, TPB posits that if the attitude and subjective norm of the individual are more favourable, there is a greater likelihood of self-efficacy and intention to execute a given behaviour. Application of this theory in the classroom context, suggests that these attitudes and norms are, in turn, shaped by educators' personal beliefs and values about teaching children with different needs and the degree to which they are influenced by the beliefs of others (Gwernan-Jones & Burden, 2009). Naturally, a teacher's ability in dealing with various

forms of learning difficulties will derive from their knowledge about and attitudes towards those difficulties (Gwernan-Jones, & Burden, 2009, p. 67).

Gwernan-Jones and Burden conducted a study on the basis of Adjzen's theory in Southwest England. Two surveys were utilised to investigate the relationship between student-teacher attitudes concerning dyslexia both prior to, and subsequent to a school practicum taking place. Primarily, the study focussed on a group of teacher trainees completing a Post Graduate Diploma, exploring attitudes towards the construct of dyslexia. The survey questions were crafted to encompass a broad range of matters relating to the complex of challenges dyslexia presents to teachers in the classroom. Through this investigation, rich information about perceived normative attitudes was obtained (p. 69). Prior to their placement, the majority of student teachers already held a positive attitude toward the construct, feeling confident in their ability to support dyslexic students. Findings revealed that teachers with a higher degree of self-efficacy were found to be more creative and willing to experiment with new methods to meet the needs of their students (p. 67). Intriguingly, female participants were also found to exhibit higher degrees of self-efficacy, except in terms of confidence in supporting students' actual learning (p. 78). Although the outcome was encouraging (with pre-service teachers holding positive views both prior and post-field experience), the need for substantive study of all-inclusive instructional practice and strategies in a degree of education was evident (p. 80).

According to Gwernan-Jones and Burden, it can be assumed new teachers will enter the profession with a sense of direction and motivations aligned with personal beliefs and normative views within the teaching profession (2010, p. 67). The study proposes that a new generation of teachers may be entering the educational profession with constructive, enthusiastic beliefs about their capacity to aid dyslexic pupils, but remain unclear as to how this can be accomplished (Gwernan-Jones & Burden, 2010). Crombie (2002) argues: 'While definitions may change over time there are little doubts that children with special learning difficulties remain a challenge' (cited in Gwernan-Jones & Burden (2010, p. 68).

Section Six

Teacher attitudes towards learning difficulties: theory and research

Despite international study of teacher attitudes and beliefs towards learning difficulties and the unfolding benefits or consequences for students with dyslexia (Ade-Ojo, 2011; Burden & Gwernan, 2009), little research has been conducted in New Zealand. This dearth of research makes it difficult to formulate with any certainty, how educators are situated. However, the overwhelming statistics of the occurrence of learning disabilities are available: According to Dyslexia Foundation of New Zealand, one in ten New Zealanders have dyslexia, including over 70,000 school children

(www.dyslexiafoundation.org.nz). Research undertaken in relation to New Zealand teachers' beliefs and values, would be a worthwhile investment in students' learning, and indispensable considering the findings overseas.

'Teacher attitudes toward dyslexia: effects on teacher expectations and the academic achievement of students with dyslexia', published in the *Journal of Learning Disabilities*, examines teacher attitudes towards students with dyslexia. This paper is a major publication in terms of perceptions surrounding the continuum of dyslexia. Although reading and spelling were known barriers, Hornstra, Denessen and Bakker investigated further risk factors for education and achievement outcomes (2010). The article is helpful for those requiring insight into theory of teacher attitude and beliefs. There are also connections to TPB, and how a person's values will affect their intentions towards a specific group or minority. The research was situated in the Netherlands, involving thirty classroom mainstream classroom teachers. Findings observed a significant correlation between a negative attitude towards students with dyslexia and poor teacher-student interactions, compared to teachers who were receptive to innovative practices and had open beliefs around learning disabilities. Teacher expectations were categorised as judgments, and the consequences of bias potentially affected curricular activities, resulting in less interpersonal engagement at a lower cognitive level. A teacher's knowledge, behaviour and underlying values will subtly impinge on their teaching practice, affecting relationships with their students.

A wide range of international research sees a continuation of educators' negative and confused positioning when teaching learners with dyslexia in mainstream schools (Riddick 2005; Rowan, 2010; Campbell, Gilmore & Cuskelly, 2014). This creates a climate of unaware teachers that are inclined to induce what Kerr describes as a 'sense of learned helplessness' (2001). For Kerr, 'learned helplessness' in the classroom is cultivated in the learner due to their own incapacity and the educator's response to it. It conversely affects and disempowers the teacher's own efficacy, resulting in a negative dualistic relationship (Kerr, 2001).

One survey exploring teacher attitudes towards dyslexia, involving twelve teachers completing a Masters of Education, revealed two broad findings (p. 82). The first and 'very striking was the variance of opinion and attitude by respondents in respect to dyslexia' (p. 82). Kerr cites the second as the 'most immediately and practically significant'. Two-thirds of respondents, when faced with a student with (diagnosed) dyslexia felt disempowered (p. 86). A sense of 'learned helplessness' occurred and language used by respondents 'grew grey and pessimistic' (p. 86). The concept of learned helplessness coined by Kerr (2001) is an ongoing debate, seemingly universal, and rooted in the confusion of what dyslexia might be, what might indicate it, what might cause it, whether it exists, but most importantly what to do about it (Hornstra, Denessen, E., Bakker, Van Den Berg, K., & Voeten, M., 2010).

Further scrutinising perception, in Kerr's (2001) small study on Adult Basic Education teachers, attitudes towards students with dyslexia and the construct of dyslexia itself were investigated. All respondents agreed that dyslexia 'is caused by a difficulty in acquiring or managing literacy skills which are caused by an innate neurological deficit' (p. 82). Kerr's (2001) paper revealed an alarming consensus in attitude, wherein the ability and potential progress of students with a diagnosis of dyslexia was regarded negatively (p. 82). This substantiates the notion that teachers lacking in adequate knowledge of dyslexic students and learning needs, Becroft of access to support, may inadvertently express negativity towards these learners (Agne, Greenwood, & Miller, 1994; Fang, 1996).

Kerr suggests that while a diagnosis may provide access to funding and open educational doors, he further states, 'however, on quite another level the diagnosis may also act as a profoundly maladaptive attribute, inducing learned helplessness, teacher and student alike' (p. 84). According to Kerr's study, the majority of respondents shared the attitude that dyslexic students' incapacity to grasp literacy concepts realised itself as 'an arduous and formidable task, that real victory was improbable' (p. 82). Alongside Kerr's research, it has been evidentially proven that an educator's assessment of and faith in a student will have a substantial impact on their success in the classroom (Agne, et al., 1996).

Anecdotally, there are many uncertainties about the extent to which teachers are aware of and provide learning support for dyslexic learners in New Zealand. The findings in Kerr's (2001) research and others, which evince a 'universal' confusion and uncertainty in educators surrounding what dyslexia may be, its indicators, what to do about it and whether the condition exists at all are clearly established (p. 82). Without adequate information and comprehension of dyslexia, the assumption could be made that the child needs to 'try harder' or has low ability (Torgesen, 1998). Considering international research, and as has been discussed above, the prevailing theme is that a teacher's capacity to deal with dyslexia stems from their knowledge about and attitudes towards those difficulties (Gwernan & Burden, 2009).

There is the normative expectation that all citizens should function in the same (able) way, the establishment of a norm of being and that individuals must adapt, rather than accepting a mode of 'difference' (Riddick, 1995, p. 225). The majority of respondents in the study conducted by Riddick had minimal or were entirely bereft of knowledge in terms of accommodating learners with dyslexia; there was a general consensus that an alternative curriculum would benefit. Unfortunately there was no understanding of how to construct this alternative curriculum or its requirements. There is no doubt that there are numerous obstacles for dyslexic individuals throughout their lives, or for any student perceived as 'different'. However, they should encounter positive engagement in the classroom (www.learnnc.org)

There is no single formula guaranteeing a fool-proof outcome or efficacious learning environment for every student, although there is evidence of certain modalities of teaching that have a wide-reaching and positive impact (www.unesdoc.unesco.org). Students may have learning difficulties for a variety of reasons, some intrinsic to the child (e.g., below-average mental ability; attention deficits; hearing or vision problems; learning disability), but others are due to outside influences including inappropriate school curriculum or methods of teaching (Westwood, 2008). Mills (2006) suggests that what matters most for the learning of children with learning disabilities are the commitments and capabilities of their teachers. However, highly specialised knowledge involving intervention and remediation is often entailed in the effective instruction of a dyslexic child, and is perhaps not a realistic expectation in terms of the pressure on teachers in mainstream classrooms. Offering the most beneficial solution for students with diverse needs is the social model of disability; or special education view.

It is important to emphasise that self-efficacy for the teacher is essential to empowering and negotiating with diversity in the classroom. Issues around literacy and dyslexia are not only a neurological issue; therefore, enabling opportunities for teachers to cope with forms of learning diversities is necessary. The capacity to create purposeful, relevant skills from evidence-based interventions along with a positive disposition equates to a brighter future for both student and teacher. However when in a class on a daily basis, these same teachers may not be consistently motivated to conceal their opinions or attitudes (Hornstra, Denessen, Bakker, et al.). Although the effects on student achievement outcomes could not be established in their foundational study, negative attitudes towards any individual or group incontrovertibly have a negative impact on achievement.

In terms of the 'Teacher attitudes towards dyslexia' paper, and their definition of attitudes as 'judgements' regarding learners' academic potential, Hornstra et al., speak of how biased teacher perceptions of students affect classroom interaction. The report says the outcome legitimises exploration into teacher responses to adult learners with dyslexia - the primary focus of the study. This is suggestive that teachers of adult literacy are more likely to encounter dyslexic learners. Many studies have (Hornstra) reported the problems faced by teachers of learners with dyslexia or dyslexic difficulties. The participants in this research revealed that they had limited confidence in the long-term benefits of tuition they provide for their students, which is alarming considering these are individuals who are responsible and entrusted with accommodating learning needs and difficulties. Evidence also supports that a student's capacity to acquire information is at its optimum when there is willingness from the teacher (Peer & Reid, 2001). This requires responsiveness and flexibility on the part of the educator to make reasonable adjustments as to the way students are taught and assessed. This would include personalised learning, and much alternative evidence of achievement in a supportive learning environment is substantiated (Westwood, 2004).

'Moving from adults to youths, children begin school full of curiosity and eagerness to learn, but can quickly become disillusioned through unanticipated failure in the classroom' (DFNZ). Given that students with dyslexia (however not all) show low achievement in reading and/or spelling, it is blatant that the failure to identify other risk factors that may contribute to low achievement rates (Hornstra, et al.) One such risk factor is low teacher expectations; the label dyslexia alone can evoke a negative attitude in some teachers (Hornstra). Research has also revealed that having a specific learning need such as dyslexia may result in reduced interaction from the teacher, limiting learning opportunities compared to neurologically 'normal' students. In the study by Kerr (2001), he states that six (out of twelve) participants responded that their tuition was severely impaired in the case of a dyslexic student.

Narrowing the gap between the abilities of dyslexic students and that of their peers is often of major concern to teachers. Biased teachers' perceptions of dyslexic students under their instruction can affect their classroom interaction overall and influence the curricular and instructional opportunities offered to dyslexics (Alvidrez & Weinstein, 1999; Paterson, 2007), curtailing their education. If efficacious teaching methods are based on principles, procedures or strategies implemented to attain desired learning results in students (Liu & Shi, 2007), should it not be of upmost importance to also narrow the gap with teacher knowledge to improve attitudes towards and beliefs in students with dyslexia?

Section Seven

Gaps in the literature on dyslexia and pedagogy in New Zealand

There is uncertainty regarding the extent to which secondary teachers in particular, are aware of and provide learning support for dyslexic students. Systematic research is urgently required to establish the extent of teacher knowledge and attitudes towards meeting the needs of adolescents who are affected by dyslexia. As earlier stated, international research suggests that teachers' abilities in dealing with different forms of learning difficulties will be affected by their knowledge about attitudes towards those difficulties (Gwernan-Jones & Burden, 2009). However, this kind of investigation does not appear to have been conducted in New Zealand.

Regardless of efforts on the part of the Dyslexic Foundation of New Zealand (see Neilson Group Survey, 2008), further research is required. Through the investigation into New Zealand teacher attitudes and experiences of teaching adolescents affected by dyslexia, insight may be obtained into what support is currently available and what action is required to best meet the needs of secondary students with dyslexia. The absence of research - as only the Neilson study, now six years old, can be located - communicates the fact that this is a pressing issue, which must be addressed here in New Zealand.

The dissertation addresses the following research questions:

1. What is the nature of teacher attitudes about dyslexia?
2. What is the extent of teacher knowledge about dyslexic learners in New Zealand?
3. What support is provided to learners with dyslexia?
4. What are the perceived barriers to providing support for dyslexic students?

Response to these queries would provide a significant degree of cognisance into the state of affairs regarding dyslexia in mainstream New Zealand secondary educational settings, and enable recommendations to be made about the educational changes to accommodate the diverse learning range of these students.

Chapter II
Methodology

Section One

Introduction

This chapter introduces the research methods and conceptual framework utilised for the research. The aim of the study was to assess the proposed research questions relating to teacher attitudes surrounding the construct of dyslexia. The methodology employed to test the questions is presented in the following sections: participants and research paradigm, survey, procedure and data analysis.

Section Two

Participants and Research Paradigm

Demographic data was collected about gender and age of the teacher, years of experience, curriculum area, city the participant resided in, and highest academic qualification. One hundred and forty-four teachers participated: ninety-five females and fifty-five males ranging from 21 to 68 years of age. Participants were from a range of urban and rural regions in New Zealand. Consistent with population density, the largest number of respondents were from Auckland (75.8%). Primarily, respondents were female (63.3%), and the largest number of participants were in the age range of 40-59 (46%), reflective of the atypical New Zealand teacher population. The predominant length of service was six to nineteen years (46.6%).

The highest numbers of participants (30%) taught in Language Arts (English and International Languages), followed by social sciences (17.1%). This is unsurprising as the study relates closely, if not directly to Language Arts and Languages (including TSOL). A Bachelor's degree was the most common qualification reported (32.8%) followed by a Bachelor's degree with Honours, a Post Graduate Certificate or a Post Graduate Diploma (25.7%). Data regarding respondents is visible in Table 1 on the following page.

Table 1. Demographic characteristics of participants

Variables	Categories	Number	Percentage
Gender	Male	55	36.7
	Female	95	63.3
Age	20-30	25	16.7
	30-39	43	28.7
	40-59	70	46.7
	60-69	12	8.0
Teaching Experience	- 6 years	29	20.7
	6-19 years	65	46.4
	20+ years	45	32.1
	No Response	1	0.7
City	Auckland	106	75.8
	Nelson	8	5.7
	Otago	1	0.7
	Wellington/Kapiti	20	10
	Whangarei	1	0.7
	London	2	1.4
	No Response	2	1.4
Subject Area	Maths	14	10
	Language Arts	42	30
	Social Sciences	24	17.1
	Science	23	16.4
	Commerce	6	42.2
	P.E./Health	4	2.8
	Visual Arts	11	7.8
	Technology	10	10
	Learning Support	4	2.8
	No Response	2	1.4
Highest Qualification	Masters Degree	32	22.8
	Bachelor Degree	46	32.8
	B(Hons)/PG Cert./PG Dip.	36	25.7
	Graduate/Graduate Dip.	19	13.5
	Doctorate	2	1.4
	Diploma	3	2.1
	No Response	2	1.4

In terms of the research paradigm, an anonymous online survey was deployed to obtain both quantitative and qualitative data from New Zealand secondary school teachers specifically - due to the author's training in teaching this age group. A mixed method design was adopted as this study seeks to understand perspectives of participants in various interpretative ways, and thoroughly explore the perceived barriers to teaching students with developmental dyslexia**.** The survey was based on the Theory of Planned Behaviour model, using questions developed by Gwernan and Burden (2009). The survey was comprised of three sections: one relating to teacher attitudes towards dyslexia, one related to knowledge about dyslexia and three open-ended questions developed specifically for the survey. The Likert scale and multiple choice questions were utilised for the first, dichotomous responses were required for the second section, and the qualitative research took place in the open-ended questions. This set of enquiries were directed into the perceived barriers encountered with dyslexic students, what support was needed and any other comments the respondents wished to add.

Section Three

Survey

The survey was administered using Survey Monkey, a free online survey application (surveymoneky.com). Once the participant clicked on the link enclosed in their email, they could access the first page of the survey. This included verification that they were providing consent and acknowledgement of having read and understood the information describing the aim and content of the questionnaire, and confirming they held a current New Zealand teacher registration and were a practicing teacher at the time of the study. The participant could skip any question and had the option of responding to the next, they were also able to exit the survey at any time.

Teachers wishing to proceed clicked 'agree' and were directed to the next section of the survey. The online survey was anonymous; no IP addresses were traceable. It took approximately fifteen minutes to complete. The data was downloaded from Survey Monkey into a Statistical Package for the Social Sciences (SPSS) to analyse the resulting data.

Survey questions in the first section investigated areas of attitudes, competencies and barriers, covering five key areas. Participants were asked to rate their responses to these questions on a five-point scale, ranging from 'Strongly Agree' to 'Strongly Disagree'. The second section of the survey covered teacher knowledge about dyslexia based on questions developed by Gwernan and Burden (2009) and teacher attitudes and beliefs in relation to their experience of the characteristics of dyslexia. Respondents were also given the opportunity to discuss in an open-ended manner, what strategies they might draw upon, what support they felt most useful and any additional comments supporting their response to the survey. The five key areas of the survey in the first section are listed and discussed below.

1. The strengths of participating teachers' positive or negative beliefs about the existence of dyslexia, as measured by two items:

   I think dyslexia is a myth.
   The word dyslexia is really an excuse for laziness.

The first statement above, prompted by *The Dyslexia Myth,* a documentary attempting to expose myths and misconceptions surrounding dyslexia, (2005) investigated general attitudes. The second statement related to conversations overheard by teaching professionals as reported by Gwernan and Burden (2009) therefore further probing was of interest.

2. Teachers' beliefs about the general implications of the use of the term 'dyslexia', as measured by the following three items:

   Dyslexic children often don't succeed as adults.
   Usually, dyslexic children have low ability.
   Calling a child dyslexic makes it sound as if they have a problem that cannot be cured.

As described by Gwernan-Jones and Burden (2009), teacher attitudes towards the potential of dyslexic students were investigated in the first statement as a direct link to their application of the Theory of Planned Behaviour. Gwernan and Burdon (2009). The second was to discover whether teachers believed there was strong correlation between dyslexia and intelligence. In the third statement, an attempt to determine a teacher' propensity to succumb to a 'sense of learned helplessness' when confronted with a dyslexic student was made, in consonance with Kerr's findings (2001).

3. Teacher's opinions about the potential efficacy or helplessness induced by the label 'dyslexia', as measured by three items:

   The label 'dyslexia' can help a child know they are not stupid.
   The label 'dyslexia' can help a teacher understand how to support the learner.
   The label 'dyslexia' can be an excuse for a child to stop trying.

In reference to Gwernan-Jones and Burden's study (2009), the first item was included to interrogate teachers' perceptions of whether the label 'dyslexia' had the potential to aid a child in understanding their difficulties (Gerber, Reiff, & Ginsberg, 1996). The second was in response to contradictory comments about the impact of labelling on teachers (Elliott, 2005; Kerr, 2001), and the third item to investigate perceptions of children's locus of control (Frederickson & Jacobs, 2001; Humphrey & Mullins, 2002).

4. Teacher's assumptions about typical parental reactions to the term 'dyslexia' in describing their child's difficulties, evaluated by two items:

   Parents often want to call a child dyslexic when the child is actually immature.
   Parents want to call their child dyslexic when actually the child has low ability.

These statements were included as they reflect educators' comments as often reported by parents.

5. Teacher's feelings of competence in supporting dyslexic children was measured by two items:

   I feel confident that I could support a dyslexic child's learning.
   I feel more training should be given to teachers about dyslexia.

Both these items again directly apply to the Theory of Planned Behaviour.

The three open-ended questions were included in the survey in order to provide the participants the opportunity to freely express opinions not covered by the multi-choice questions. In the structure of the survey itself, these were numbered as questions 34 to 36 and will be referred to as such in the rest of this project. Recurring themes in the responses were identified and the number of thematic instances were tallied according to similar wording or meaning. These questions are listed below:

34. What barriers do you face in providing support for a dyslexic student's learning?

35. What additional support or resources would you try to access for a student with dyslexia?

36. Do you have additional comments that relate to your answers, or on your experiences teaching a student with dyslexia?

This set of questions elicited the most productive and intriguing results in terms of the study as a whole, and diverged significantly from the Likert Scale, multiple choice and dichotomous responses.

Section Four

Procedure

A list of New Zealand secondary schools was generated via an education statistics website. This data was imported into an excel spreadsheet and categorised by decile ratings and structure of the school (e.g. co-educational, single sex). The author then used email addresses sourced from a government web address to contact principals requesting teacher participation via email, describing the study and intentions of the survey. When agreement to participate was received from a principal, a consent letter was forwarded via email (see Appendix), requesting the form to be signed and returned by post, fax, or email. Full description of the research and an electronic survey link, with a request that it be forwarded to all classroom teachers at the school was then sent to the principal via email.

Sixty-seven schools were initially approached to participate. According to email responses, twenty-six schools agreed to take part in the survey and fifteen declined to participate. Many schools failed to respond. It is uncertain whether all consenting principals forwarded the survey on to their staff. Finally, the study was approved in accordance with recommended ethical practice, the University of Auckland 'Code of Ethical Conduct for Research' (https://www.auckland.ac.nz/en/about/research/re-ethics/re-uahpec.html). The results of the study can be found in the tables and figures in the following chapter.

Chapter III

Results

Table 2. *I think dyslexia is a myth*

The results in Table 2 show that over 95% of the respondents either disagreed (25%) or strongly disagreed (70%) with the statement 'I think dyslexia is a myth' with 74.1% of female and 66% males strongly disagreeing with this statement.

Responses	**Female (*n*=85)**		**Male (*n*=53)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	0	0.0	2	3.8	2	1.4
Agree	1	1.2	0	0.0	1	0.7
Neutral	1	1.2	2	3.8	4	2.9
Disagree	20	23.5	14	26.4	35	25.0
Strongly disagree	63	74.1	35	66.0	98	70.0

Table 3. *The word 'dyslexia' is really just an excuse for laziness*

The results in Table 3 show that over 90 % of the respondents either disagreed (44%) or strongly disagreed (67.4%) with the statement 'The word 'dyslexia' is really just an excuse for laziness with 71.6% of female and 53.9% males strongly disagreeing with this statement. Female teacher were significantly more likely than male teacher to strongly disagree with this statement.

Responses	**Female (*n*=88)**		**Male (*n* =54)**		**Total (*n* =144)**	
	%	N	%	N	%	N
Strongly Disagree	71.6	63	59.3	32	67.4	97
Disagree	27.3	24	37.0	20	30.6	44
Neutral	1.2	1	1.9	1	1.4	2
Agree	1.9	1	0	0	0.7	1
Strongly Agree	0	0	1.9	1	0.0	0

Table 4. *Dyslexic people often do not succeed as adults*

The results in Table 4 show that over 85% of the respondents either disagreed (36.4%) or strongly disagreed (50.3%) with the statement 'Dyslexic people often do not succeed as adults' with 52.9% of females and 46.3% of males strongly disagreeing with this statement.

Responses	**Female (*n*=87)**		**Male (*n*=54)**		**Total (*n* =141)**	
	N	%	N	%	N	%
Strongly agree	0	0.0	0	0.0	0	0.0
Agree	3	3.4	3	5.6	6	4.2
Neutral	8	9.2	5	9.3	13	9.1
Disagree	30	34.5	21	38.9	52	36.4
Strongly disagree	46	52.9	25	46.3	72	50.3

Table 5: *Usually dyslexic students have low ability*

The results in Table 5 show that over 85% of the respondents either disagreed (43%) or strongly disagreed (45%). Female teachers (50.6%) were significantly more likely than male teachers (35.8%) to strongly disagree with the statements 'Usually dyslexic students have low ability'.

Responses	**Female (*n*=87)**		**Male (*n*=53)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	3	3.4	0	0.0	3	3.2
Agree	0	0.0	2	3.8	2	1.4
Neutral	8	9.2	4	7.5	12	8.5
Disagree	32	36.8	28	52.8	61	43.0
Strongly disagree	44	50.6	19	35.8	64	45.1

Table 6: *Calling a student 'dyslexic' makes it sound as if they have a problem that cannot be cured*

The results in Table 6 show that over 60% of the respondents either disagreed (51%) or strongly disagreed (10.5 %) with the statement 'Calling a student "dyslexic" makes it sound as if they have a problem that cannot be cured' with 10.3% of female and 11.1% males strongly disagreeing with this statement.

Responses	**Female (*n*=87)**		**Male (*n*=54)**		**Total (*n* =141)**	
	N	%	N	%	N	%
Strongly agree	0	0.00	4	7.4	4	2.8
Agree	15	17.2	10	18.5	27	18.9
Neutral	12	13.8	12	22.2	24	16.8
Disagree	51	58.6	22	40.7	73	51.0
Strongly disagree	9	10.3	6	11.1	15	10.5

Table 7: *Dyslexic students rarely learn to read well*

The results in Table 7 show that over 70% of the respondents either disagreed (52.1%) or strongly disagreed (21.1%) with the statement 'Dyslexic students rarely learn to read well' with 20.7% of female and 22.6% males strongly disagreeing with this statement.

Responses	**Female (*n*=87)**		**Male (*n*=55)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	0	0.0	0	0.0	0	0.0
Agree	2	2.3	5	9.4	8	5.6
Neutral	16	18.4	14	26.4	30	21.1
Disagree	51	58.6	22	41.5	74	52.1
Strongly disagree	18	20.7	12	22.6	30	21.1

Table 8: *The label 'dyslexia' can help a child know they are not lazy or stupid*

The results in Table 8 show that over 80% of the respondents either agreed (55.6%) or strongly agreed (24.6%) with the statement 'The label "dyslexia" can help a child know they are not lazy or stupid' with 28.7% of female and 18.9% males strongly agreeing with this statement.

Responses	**Female (*n*=87)**		**Male (*n*=53)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	25	28.7	10	18.9	35	24.6
Agree	50	57.5	28	52.8	79	55.6
Neutral	9	10.3	9	17.0	19	13.4
Disagree	2	2.3	5	9.4	7	4.9
Strongly disagree	1	1.1	1	1.9	2	1.4

Table 9: *The label 'dyslexia' can help a teacher understand how to support the learner*

The results in Table 9 show that over 75% of the respondents either agreed (53.5%) or strongly agreed (24.6%) with the statement 'The label "dyslexia" can help a teacher understand how to support the learner' with 27.9% of female and 20.4% males strongly agreeing with this statement. Results clearly show more female teachers agreeing with this statement than male teacher.

Responses	**Female (*n*=86)**		**Male (*n*=54)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	24	27.9	11	20.4	35	24.6
Agree	48	55.8	27	50.0	76	53.5
Neutral	9	10.5	8	14.8	17	12.0
Disagree	5	5.8	6	11.1	12	8.5
Strongly disagree	0	0.0	2	3.7	2	1.4

Table 10: *The label 'dyslexia' can be an excuse for a student to stop trying*

The results in Table 10 show that over 45% of the respondents either agreed (45.1%) or strongly agreed (2.8 %) with the statement 'The label "dyslexia" can be an excuse for a student to stop trying' with 46.5% of female and 40.7% males agreeing with this statement.

Responses	**Female (*n*=86)**		**Male (*n*=54)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	1	1.2	3	5.6	4	2.8
Agree	40	46.5	22	40.7	64	45.1
Neutral	15	17.4	13	24.1	28	19.7
Disagree	24	27.9	12	22.2	36	25.4
Strongly disagree	6	7.0	4	7.4	10	7.0

Table 11: *Parents often want to call a child dyslexic when they are just actually immature*

The results in Table 11 reveal that over 55% of the respondents either disagreed (44.4%) or strongly disagreed (10.6 %) with the statement 'Parents often want to call a child dyslexic when they are just actually immature' with 48.8% of female and 38.9% males disagreeing with this statement.

Responses	**Female (*n*=86)**		**Male (*n*=54)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	0	0.0	1	1.9	1	.07
Agree	8	9.3	6	11.1	14	9.9
Neutral	29	33.7	18	33.3	49	34.5
Disagree	42	48.8	21	38.9	63	44.4
Strongly disagree	7	8.1	8	14.8	15	10.6

Table 12: *Parents want to call their child 'dyslexic' when actually the child has low ability*

The result in Table 12 shows that over 55% respondents either disagree (46.2%) or strongly disagree (13.3%) with the statement 'Parents want to call their child "dyslexic" when actually the child has low ability' with 13.2% of females and 13.3% of males strongly disagreeing with this statement.

Responses	**Female (*n*=88)**		**Male (*n*=53)**		**Total (*n* =141)**	
	N	%	N	%	N	%
Strongly agree	0.0	0	3	5.7	3	2.1
Agree	14	15.9	7	13.2	21	14.7
Neutral	20	22.7	13	24.5	34	23.8
Disagree	42	47.7	23	43.4	66	46.2
Strongly disagree	12	13.6	7	13.2	19	13.3

Table 13. *I feel confident I could support a dyslexic student's learning*

The result in Table 13 shows that overall 50% respondents either agreed (42%) or strongly agree (10.5%) with the statement 'I feel confident I could support a dyslexic student's learning' with 12.5% female and 7.5% male strongly agreeing with this statement.

Responses	**Female (*n*=88)**		**Male (*n* =53)**		**Total (*n* =141)**	
	N	%	N	%	N	%
Strongly agree	11	12.5	4	7.4	15	10.5
Agree	37	42.0	22	40.7	60	42.0
Neutral	24	27.3	11	20.8	35	24.5
Disagree	14	15.9	15	27.8	30	21.0
Strongly disagree	2.3	2	1	1.9	3	2.1

Table 14: *I feel more training should be given to teachers about dyslexia*

The results in Table 14 show over 85% of the respondents agreed (38.5%) or strongly agreed (50.3 %). Female teachers (59.8%) were significantly more likely than male teachers (37.0%) to strongly agree with the statement 'I feel more training should be given to teachers about dyslexia.'

Responses	**Female (*n*=87)**		**Male (*n*=54)**		**Total (*n* =141)**	
	N	%	N	%	N	%
Strongly agree	52	59.8	20	37.0	72	50.3
Agree	30	34.5	23	42.6	55	38.5
Neutral	4	4.6	9	16.7	13	9.1
Disagree	1	1.1	0	0.0	1	1.7
Strongly disagree	0	0.0	2	3.7	2	1.4

Table 15: *Dyslexic people are sometimes known for their superior creative thinking, visual-spatial skills and/or intuitive understanding*

The result in Table 15 shows that over 70% respondents either agreed (47.2%) or strongly agree (22.9%) with the statement 'Dyslexic people are sometimes known for their superior creative thinking, visual-spatial skills and/or intuitive understanding' with 27.3% of female and 14.8% males strongly agreeing with this statement.

Responses	**Female (*n*=88)**		**Male (*n*=54)**		**Total (*n* =142)**	
	N	%	N	%	N	%
Strongly agree	24	27.3	8	14.8	33	22.9
Agree	42	47.7	26	48.1	68	47.2
Neutral	16	18.2	17	31.5	34	23.6
Disagree	6	6.8	3	5.6	9	6.3
Strongly disagree	0	0.0	0	0.0	0	0.0

Table 16: *Dyslexic children can learn to spell*

The results in Table 16 show that over 70 % of the respondents either agreed (55.6%) or strongly agreed (15.3%) with the statement 'Dyslexic children can learn to spell' with 12.5% of female and 20.4% males strongly agreeing with this statement.

Responses	**Female (*n*=88)**		**Male (*n*=54)**		**Total (*n* =142)**	
	N	%	N	%	N	%
Strongly agree	11	12.5	11	20.4	22	15.3
Agree	55	62.5	25	46.3	80	55.6
Neutral	17	19.3	14	25.9	33	22.9
Disagree	5	5.7	4	0	9	6.3
Strongly disagree	0	0.0	4	7.4	0	0.0

Table 17: *Poor readers often have average or high ability*

The results in Table 17 reveal 44.4% of all respondents were neutral, with 27.9% of female participants disagreeing and 33.3% of male with the statement 'Poor readers often have average or high ability'.

Responses	**Female (*n*=86)**		**Male (*n*=54)**		**Total (*n* =140)**	
	N	%	N	%	N	%
Strongly agree	1	1.2	2	3.7	3	2.1
Agree	21	24.4	7	13.0	29	20.4
Neutral	37	43.0	26	48.1	63	44.4
Disagree	24	27.9	18	33.3	43	30.3
Strongly disagree	3	3.5	1	1.9	4	2.8

Table 18: *All classes should be dyslexic friendly*

The results in Table 18 show that over 75% of the respondents either agreed (54.5%) or strongly agreed (23.1 %) with the statement 'All classes should be dyslexic friendly' with 25.3% of female and 20.4% males strongly agreeing with this statement.

Responses	**Female (*n*=87)**		**Male (*n*=54)**		**Total (*n* =141)**	
	N	%	N	%	N	%
Strongly agree	22	25.3	11	20.4	33	23.1
Agree	49	56.3	28	51.9	78	54.5
Neutral	11	12.6	8	14.8	20	14.0
Disagree	5	5.7	6	11.1	11	7.7
Strongly disagree	0	0.0	1	1.9	1	0.7

Teacher Knowledge about Dyslexia

Table 19: *Dyslexia primarily refers to...*

The results in Table 19 reveals over 86% of all respondents agreed with the statement 'Dyslexia primarily refers to "both a and b option"' with 56.3% of female and 57.4% males strongly agreeing with this statement.

Responses	**Female (*n*=87)**		**Male (*n*=54)**		**Total (*n*=141)**	
	N	%	N	%	N	%
a. Difficulty with letter and/or number reversals	7	8.0	3	5.6	10	7.0
b. Difficulty with written language	3	9.2	5	9.3	13	9.1
c. Difficulty with learning the sequences of letters, syllables or numbers	23	26.4	15	27.8	38	26.6
d. Both a. and b.	49	56.3	31	57.4	82	57.3

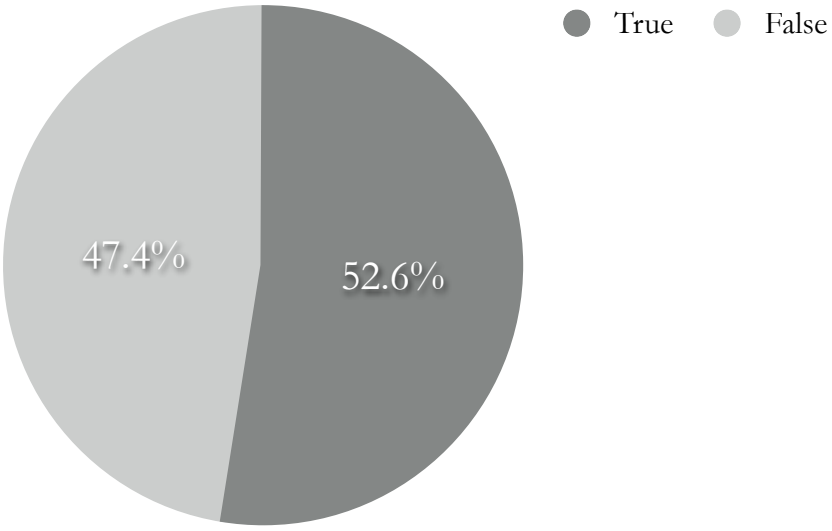
Table 20. *Dyslexia is characterised by difficulty with:*

The results in Table 20 show that over 86% of the respondents agreed with the statement 'Dyslexia is characterised by difficulty at All of the above option' with 82.8% of female and 90.7% males strongly agreeing with this statement.

Categories	**Female (*n*=83)**		**Male (*n*=54)**		**Total (*n*=140)**	
	N	%	N	**%**	N	**%**
a. Text level	5	5.7	1	1.9	6	4.2
b. Sentence level	1	1.1	1	1.9	2	1.4
c. Word level	9	10.3	3	5.6	12	8.4
d. All of the above	72	82.8	49	90.7	123	86.0

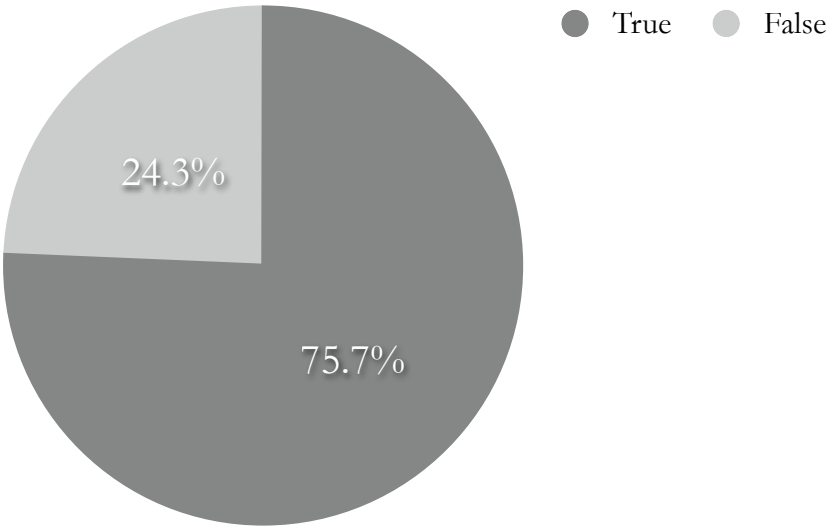
Graph 1. *Dyslexia is not inherited*

The results in Graph 1 show that over 50% respondents thought that the statement 'Dyslexia is not inherited' is True (females: 46.4 %; males: 65.3%).



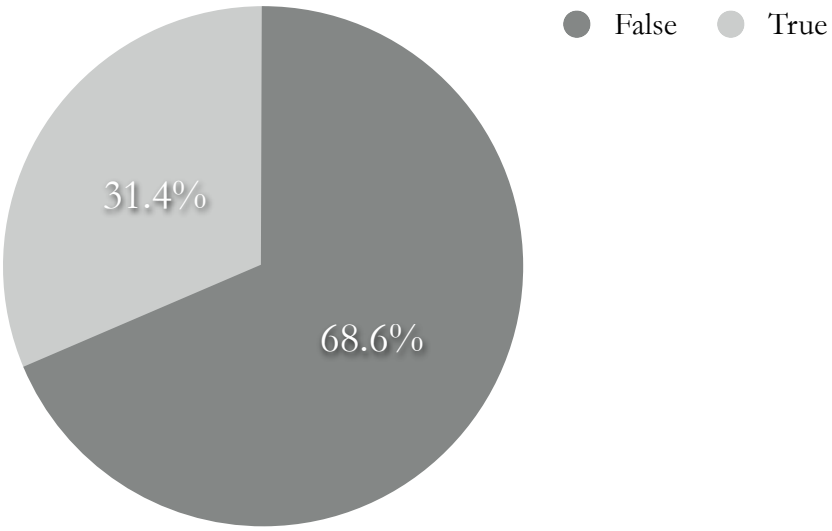
Graph 2. *Difficulties with fluency and automaticity are common in dyslexia*

The results in Graph 2 show that over 75% respondents thinks that the statement 'Difficulties with fluency and automaticity are common in dyslexia' is True (females 75.9%; males 78.4%).



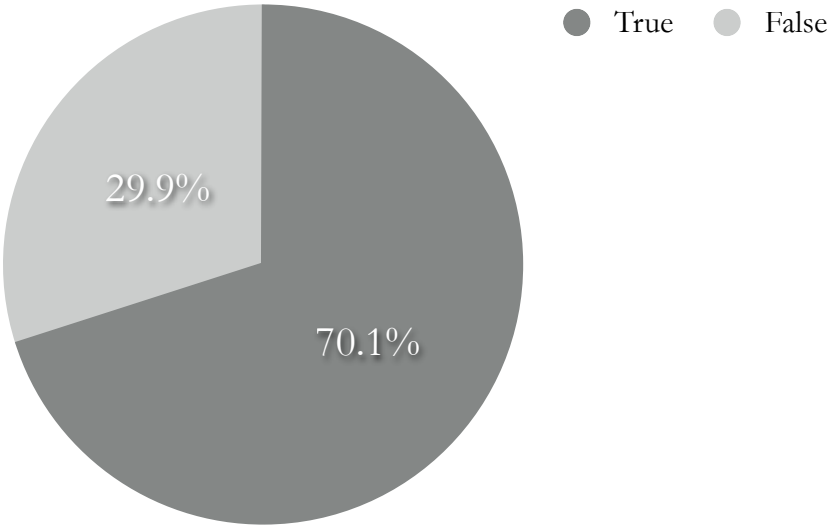
Graph 3. *A person who is dyslexic is more likely to also have ADHD, dyspraxia, and/or specific language impairment than a non-dyslexic person*

The results in Graph 3 show that over 68 % respondents think the statement 'A person who is dyslexic is more likely to also have ADHD, dyspraxia, and/or specific language impairment than a non-dyslexic person' (female 72.1%; male 63.5%).



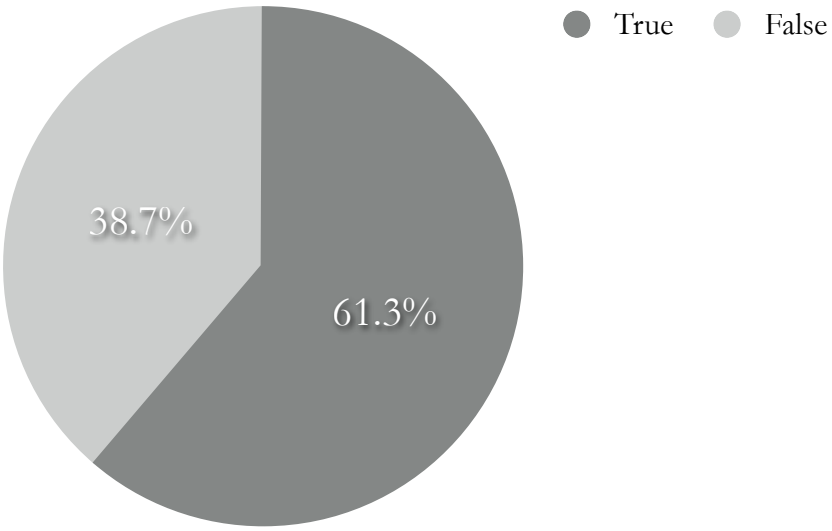
Graph 4. *A dyslexic person is likely to have an excellent auditory working memory*

The results in Graph 4 show that over 70% respondents think the statement 'A dyslexic person is likely to have an excellent auditory working memory' is True (74.4% of female; 63.5% males).



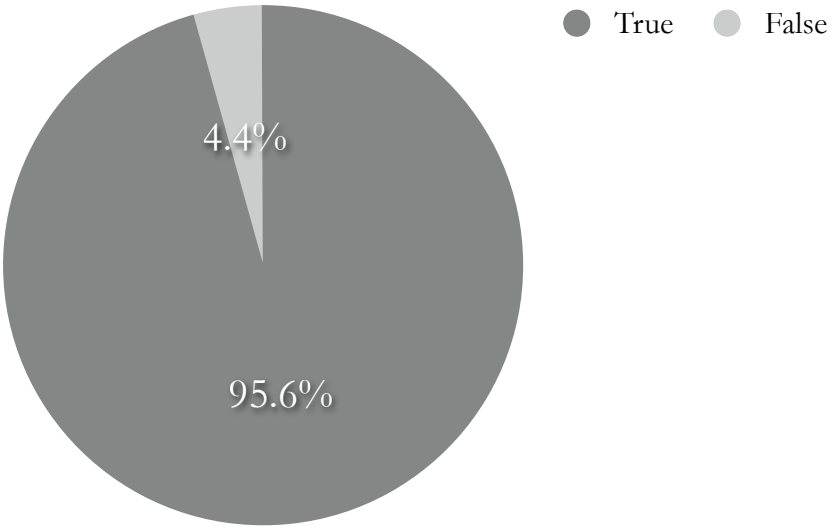
Graph 5. *There is a general consensus that difficulty with phonological coding is the core deficit in dyslexia*

The results in Graph 5 show that over 60% respondents think the statement 'There is a general consensus that difficulty with phonological coding is the core deficit in dyslexia' is True (female 61.3%; male 61.9%).



Graph 6. *Multi-sensory teaching methods are considered to be particularly helpful to dyslexic students.*

The results in Graph 6 show over 90% respondents agree with the statement 'Multi-sensory teaching methods are considered to be particularly helpful to dyslexic students' is True (female 96.4%; male 94.1%).



Open-Ended Questions

In the qualitative research, the key points that emerged are presented above the quotes illustrative of each theme. The first open-ended question respondents were asked was: 'What barriers do you face in providing support for a dyslexic student's learning?' (*n*=) This question was deliberately placed directly after the multi-choice questions. The following issues emerged in one hundred and thirty of the teachers' answers.

The most frequent response (from fifty-seven participants, representing 44% of the total sample who answered this question), regarded time as the biggest barrier when teaching students with significant learning difficulties. This involved a lack of time in the context of resource development and production, and lack of access to specialised knowledge as to how to create these teaching resources.

- '*Time for personal attention in large classes.*'
- '*Time to develop dyslexic friendly resources.*'
- '*More preparation time is needed to scaffold course work accordingly.*'
- '*There are often too many other students in the class to offer the help a dyslexic child needs. At times it is not possible to change a task to suit because it is driven by national assessment. The student's themselves don't want extra help because they don't want to be seen as different.*'

Additionally, six teachers indicated large class sizes also impinged on time that could be spent one-on-one with higher-needs students. Eighteen participants mentioned large class sizes had a negative impact on their ability to better support dyslexic students, and that large students numbers impede on teaching opportunities to master or extend teaching concepts. This also affected their knowledge of what scaffolding would look like. They cited:

- '*Large class sizes with students of varying ability so finding the time to prepare documents and sit down with dyslexic students is very hard.*'
- '*Class size - too big lack of technology time to adapt tasks.*'
- '*Challenge of large class sizes.*'

Certain respondents were aware that teacher attitudes towards students with dyslexia are an integral part of support, substantiating the TPB model, and were mentioned in five instances. Samples of these comments are below.

- '*Negative staff attitudes can be present and limit dyslexic student success.*'
- '*Negative staff attitudes that they don't have time or can't be bothered to differentiate can affect everything....thank you for trying to put it together.*'

Thirty-two respondents stated access to resources is problematic.

- *'Not well educated/informed of the condition, do not have the knowledge to adapt resources for learning. Do not have the time to adapt any resources required for individual learning'.*

Fourteen believed inadequate training and institutional provision of professional learning present significant barriers. These respondents emphasised the lack of training offered throughout the course of pre-service teacher training and called for further education.

- *'More professional development is needed, more professional development to better develop an understanding of the construct/dyslexia; more staff supporting one another is needed.'*
- *'I had no training about dyslexia when I trained as a teacher. Lack of training and information now. Difficulty as a secondary teacher with information being passed on the beginning of the year'.*
- *'...it was never covered in my undergrad or post-grad...'*

Another barrier was absence of knowledge; mentioned forty-one times. Seventeen respondents commented on their limited understanding of dyslexia, while twenty-two teachers were uncertain how to best aid learners. A lack of knowledge of what strategies to implement were also cited as obstacles when teaching students with dyslexia.

- '*A lack of knowledge...My school has provided token gesture videos but never covered this in staff PD.*'
- '*I would love more information on how to best support dyslexic students.*'
- *'Knowledge, time to prepare/use appropriate resources.*'
- *'Other than verbal instruction, lack of knowledge on how else to help them learn.*'

The second question asked was: 'What additional support or resources would you try to access for a student with dyslexia?' (*n*=123) From the survey it is apparent that teacher aides are of major support in mainstream schooling; this was the most common theme in response to the question. Sixty-three teachers were desirable of this additional support.

- '*Teacher aide especially for assessments; school issued laptop, additional time for assessments.*'
- '*Teacher aide working with them when possible.*'
- '*Preferably a teacher aide.'*

Additionally, fifty-five respondents referred to dyslexic-friendly resources they would try to access. Specific resources for students described were primarily technology-based; in particular, laptops, software, extended access to school computers, and multi-sensory 'stuff', as well as coloured lenses. These participants' responses demonstrate some knowledge of tools and modalities of learning that can be employed to encourage dyslexic students, but are generic and some of these have been discredited. These teachers also suggested that specialised education with experts could aid them in the development of resources and learning strategies.

- '*Resources intended specifically for dyslexic students. Textbooks are not helpful.*'
- '*5 computers and a printer in the classroom, a smart board, teacher aides, reader-writers for exams, SPELD, Danks Davis Dyslexia, mentors at school to offer support and encouragement.*'
- *'All notes are electronic; these are supplied to dyslexic students in advance. Incorporate a range of teaching methods to allow students time to process information rather than expecting them to keep up with board work. Use the students support services the school provides to help scaffold students into written work and allow students to use laptops where applicable.*'
- *'Access to the special "dyslexic friendly" weighted font that has been invented.*'
- '*More training and help with resources related to curriculum that are available to use.*'
- '*I guess I'd like to know want I can do to help a student. Currently, it would be fair to say I don't do much.*'

Time was again raised by eighteen teachers in response to this question, but as a means of providing support for their dyslexic students, and allocating time to try and remediate dyslexic difficulties.

- '*Time to work through issues for them, so problems can be worked on.*'

The final open-ended question asked: 'Do you have additional comments that relate to your answers, or on your experiences teaching a student with dyslexia?' (*n*=75) Knowledge, or lack thereof, of the construct of dyslexia was broached twenty-one times and was the most frequent issue raised in this final question.

- *'Not something I have had direct contact with (or ever been made aware of a student that I taught as having dyslexia) which I find interesting as I have taught for many years.'*

- *'Only know we have to cater for them, not how to cater for them.'*

Five teachers again remarked on time constraints as a predicament. The issue of resources was again raised as well as further education and specialised knowledge due to the number of students suffering from dyslexia and their inability to recognise it, as its occurrence is often greater than they realise. Relationship building was mentioned sixteen times, which is significant, as this is a central issue in ensuring positive outcomes for students with dyslexia.

- '*The most important is the relationships built to assist learning, often the students are very negative to all formal learning.*'

This final question proved to the most productive in exposing teacher beliefs in relation to dyslexia, evidenced by the following quotes. A glaring divergence in the perspectives of educators is evinced. Analysis of these findings is undertaken in the following chapter.

- '*Yes and thank you for providing the opportunity. I am not going to dispute the fact that some people are dyslexic and that dyslexia exists. However here in New Zealand we tend to label students to come up with a name for everything every occasion. I am pretty convinced that the majority of students with dyslexia are nothing but the victims of incompetent teachers and low-level quality teaching at primary level. Those kids are the casualties and the Ministry itself is responsible for all those young children who are not taught how to read, not taught proper teaching strategies, phonetic alphabet, reading with understanding and are note taught related skills, like retelling, summarising, comprehension etc. As a former Ministry's employee I feel competent to make such statement. The quality of teaching reading and writing at primary level is below every standard.*'

- '*More students suffer from dyslexia than a lot of us realise so up skilling.'*

- *'Often dyslexic kids use the label as an excuse, they need to learn strategies to cope with their handicap. I am mildly dyslexic and have developed strategies to use.'*

- *'It's just a tag/excuse I treat everyone as equals; some just have more talent than others. I do agree that top pupils are disadvantaged in exams e.g. Often "dyslexic" pupils are given extra time when if "top" pupils were also given*

extra time they might score 100% as opposed to only 96%, my own daughter was a case in point, straight discrimination.'

Chapter IV

Discussion

Section One

Summary of the study

The purpose of this study was to better understand the extent of recognition and attitudes that teachers have of dyslexia in mainstream New Zealand secondary education settings. Perceived barriers teachers experienced in the classroom were also investigated. The following questions were addressed:

What is the nature of teacher attitudes about dyslexia?
What is the extent of teacher knowledge about dyslexic learners in New Zealand?
What support is provided to learners with dyslexia?
What are the perceived barriers to providing support for dyslexic students?

This chapter focuses on a discussion of the findings, the implications these have for teachers' practice in the classroom alongside governmental and institutional policy in relation to dyslexia. The limitations of the study itself are identified alongside recommendations for future research - considering the gaps in literature - and a concluding statement are made.

Overall there was a degree of variability in participants' responses. Although most seem to be positive towards the general construct of dyslexia, the data indicates uncertainty among certain teachers about what dyslexia actually is, how it manifests in children, and how to address it in their teaching. The principal consensus gleaned from the data was that teachers require specific training and further education to deal with dyslexia. The high percentage of teachers that strongly agreed serves as an acknowledgement that educators feel they have insufficient knowledge, and this is potentially a disservice for dyslexic learners in classrooms.

Section Two

Discussion of the findings.

The results substantiate other studies such as Gwernan-Jones and Burden's (2010). These academics have established that while teachers may be situated positively towards the construct of dyslexia, its efficacy is subject to a readiness to provide support. The findings indicate differing degrees of recognition of dyslexia in New Zealand - sometimes accompanied by inadequate support for dyslexic learners in the public school system. Teachers appear to feel under-qualified and too overworked to integrate effective learning strategies for dyslexic students in the classroom. This difficulty is compounded by a deficit in: specific education concerning dyslexia in teacher training; knowledge of the classroom adjustments needed for children with learning difficulties; and the large size of classrooms which impact teachers' capacity to assist learners with dyslexia.

In terms of knowledge, significant confusion and misconceptions about dyslexia in the data is demonstrative of the lack of education that teachers undergo throughout their degrees. The contradictory nature of participants' responses in the findings is evidence of this. A divergence of opinion and knowledge was apparent as participants proceeded through the survey. In the initial sections of the survey, teacher attitudes towards the existence of dyslexia were investigated. Overall, the majority of teachers responded positively. Findings show over 95% of teachers disagreed or strongly disagreed with the statement, 'dyslexia is a myth', while a similar number (90%) did not believe that dyslexia was an excuse for laziness. Eighty-five percent of the respondents disagreed with the assertion that dyslexic children do not succeed as adults, evincing hope for their futures. This operates to dispute Kerr's theory of 'learned helplessness'. When teachers were asked about their views on caregivers' statements that their child is dyslexic, findings were positive overall, with over half disagreeing that parents use dyslexia as an excuse for their child's educational difficulties.

The general assumption underpinning dyslexia is that dyslexics struggle to read - suggesting teachers have a positive belief system and would, with adequate training, feel equipped to develop literacy skills for dyslexic students. Constructing dyslexic-friendly classroom environments was advocated by over 75% of respondents, with many suggesting that difficulties could be alleviated through further placement of teacher aides in their classrooms. The majority of teachers believed that dyslexic students are capable of attaining literacy skills. Responses to the stereotype that dyslexics have low academic ability were nearly unequivocal in their rejection of the assumption, as over 85% of the respondents either disagreed (43%) or strongly disagreed (45%). Female teachers (50.6%) were significantly more likely than male teachers (35.8%) to strongly disagree with this particular statement. The findings from the study are indicative that teachers believe that learning difficulties are beyond an individual's control and not caused by a lack of ability or effort. Alongside this knowledge, these behavioural beliefs and values exhibited are in consonance with a positive instance of TPB, suggesting that dyslexic learners potentially can have constructive learning experiences.

However, polarised attitudes towards the label dyslexia and its implications were also evident in the results. On the other spectrum of the theory of planned behaviour the label dyslexia can result in the student and educators reducing their expectations and goals for what can be achieved in the classroom (Ajzen, 2005). A focus and emphasis on the construct of disability may not necessarily prepare practitioners for productive engagements with dyslexic learners (Ade-Ojo, 2011). While the findings revealed just over 60% of teachers disagreed (51%) or strongly disagreed (10.5%) with the statement that 'calling a child dyslexic makes it sound as though they have a problem that could not be fixed', almost 18.9% did agree and 16.8% were unsure.

A number of respondents were extremely inimical about 'labelling' students as dyslexic, particularly in the open-ended responses, where teachers could freely express themselves. One respondent stated: 'Often dyslexic kids use the label as an excuse...' while another said, 'here in New Zealand we tend to label students, to come up with a name for everything, every occasion. I am pretty convinced that the majority of students with dyslexia are nothing but the victims of incompetent teachers and low-level quality teaching at primary level.' Kerr (2001) writes that when dyslexia is discussed as a learning disability or disease, 'blame is attributed to the individual and manifests itself negatively.' Contradictions in the findings are apparent in terms of the deployment of the label, in contrast to earlier in the survey where teachers displayed positive attitudes towards the construct of the disability. When conceptualising dyslexia, teachers perceived barriers to academic progress as a result of the disability and not innate to the individual. Seventy percent of participants were aware that dyslexic students are capable of attaining literacy skills. These conflictual responses in terms of the dyslexic label in comparison to a general knowledge of it, reflect the confusion surrounding the condition for educators.

A marked absence of knowledge and education was exhibited as the survey progressed into a more exploratory territory and an increased percentage of respondents were 'neutral' to statements in the questionnaire, demonstrating uncertainty towards dyslexia and its impact on a learner. Almost 20% of respondents were ambivalent about the claim that: 'Some children may use the label "dyslexia" as an excuse to stop trying,' and nearly 50% agreed. A third of the respondents were 'neutral' on whether or not they accept a caregiver's claim that their child suffered from the disability, suggesting that teachers did not feel educated enough on the subject to make a qualified assessment. A significant reliance on stereotypes was evident when teachers responded to the statement: 'Dyslexic people are sometimes known for their superior creative thinking, visual-spatial skills and/or intuitive understanding', demonstrating the lack of education teachers possess. Only half of the participants felt confident in supporting a dyslexic learner. One teacher explicitly lamented the absence of professional development and cited that she 'had no training about dyslexia when [she] trained as a teacher'.

In terms of stereotypes, the questions regarding teacher knowledge (Tables 19 and 20) show that participants had a reasonable level of understanding concerning literacy problems. However the queries were deliberately targeted to assess the degree of specific knowledge teachers had of a dyslexic learner. They asked what dyslexia referred to and what problems a student would encounter with the learning difficulty. A multiple choice methodology was employed in this section. When asked what dyslexia referred to, options b (difficulty with written language) and c (learning sequences of letters, syllables and numbers) would have been the optimal answer, as they are a more accurate representation of the difficulties a dyslexic learner experiences. Participants mostly selected options a and b, reflecting a dependence on general knowledge, and the typical issues dyslexics encounter with literacy. More than

86% of the respondents selected the 'All of the above' option, with 82.8% of female and 90.7% males agreeing these are the correct manifestations of dyslexia when characterising the disability.
When it came to the cognitive and neurological nature of dyslexia in the survey, a cursory understanding of is reflected as 75% of respondents agreed that difficulties with fluency and automaticity are common in dyslexia. However, more than half of the teachers believed it was true that dyslexia is not congenital, which is is at odds with research evidence about the neurological nature of dyslexia (Shaywitz, 2003; Lucid 2001). Over 68% respondents did not believe that a person who is dyslexic is more likely to have ADHD, dyspraxia, and/or specific language impairment than a non-dyslexic person. This is cause for concern as research has established co-occurrence of interconnecting disorders is often the case with dyslexics. For example, a common co-morbidity factor with ADHD sufferers have dyslexia, and 30-52% of dyslexic individuals have ADHD. The lack of awareness of co-morbidity disorders only further serves to negatively affect the academic future and self-esteem of a child. (International Dyslexia Association, 1997). Similarly, two-thirds of respondents believed a dyslexic person is likely to have an excellent auditory working memory. A working memory index deficit can be a debilitating impairment and is present in a range of medical conditions including those who have been diagnosed with dyslexia (www.cogmed.com).

Section Three

Implications for practice

Professional development in the area of dyslexia can help educators understand dyslexia is a problem with reading and not of intelligence (Humphrey, 2002). In many ways, trust underlies much of what happens in school each day. The task of aiding young people to grow into well-educated and independent adults is dependent on the relationship between teachers and students. A proposal could be made that sees the Post Primary Teacher Association becoming more involved in a discussion relating to learning disabilities, dyslexia, and promote or lobby for changes to teacher education. In particular, linguistics plays a factor in learning for dyslexics, and an absence of specialist knowledge may be contributing to a struggling percentage of pupils, both in New Zealand and internationally (Carreker, Joshi & Gooden, 2010; PIRLS, 2010; Moats, 2000).

What should be clear is that without appropriate intervention, the absence of adequate literacy skills and abilities will create problems which persist into adulthood, and engender limitations in individuals' futures. The backbone of education and learning is a suitable level of linguistics, word recognition knowledge and comprehension; without this children will be penalised in all areas of secondary school and is included in the discussion as to why it is significant (www.unesco.org). In facilitating this learning, findings in the open-ended items saw a high frequency of respondents mentioning time as being a significant barrier. This was the most recurrent theme throughout the entire survey. Teachers felt they

had limited time to spend one-on-one with students, largely due to increasing class sizes. Teachers felt they had limited time to access resources, and limited time to develop new dyslexic specific resources. Over 90% of the respondents agreed with the statement: 'Multi-sensory teaching methods are considered to be particularly helpful to dyslexic students'. This involves multi-sensory, auditory, visual and kinesthetic methods to develop better understanding and embed knowledge in ways a didactic approach will not (Herrel & Jordon, 2008). However, without the time to develop or educate themselves in these modalities of teaching, teachers are unable to constructively engage with dyslexic learners.

Hypothetically, if measures were taken to reduce class sizes and additional in-class support was provided (resource teachers, teacher aides and Learning Support teachers as stated in respondents' comments), the issue of time would no longer be a perceived barrier. However, according to the data from the study, knowledge would still absent in relation to the characteristics of dyslexia. The logical question at this juncture is how and where educators would access information in order to develop resource materials that would remediate dyslexic difficulties. Many teachers stated that access to computers, electronic devices and the internet would aid them in the open-ended responses of the survey. Reliance on the internet should not be regarded as a reliable source, as evidence-based methods should be structured on substantiated research (for example, Orton Gillingham methods). If adequate changes were made to the way professional learning and collaborative efforts were implemented in school, teachers may benefit by sharing and exchanging resources, ideas and workload to produce instructional aids to support students with dyslexia.

Section Four

Implications for policy

Targeted teacher training, in special education programs, in particular pre-service teacher education is one effectual way to stimulate growth and understanding in schools and will prepare teachers new to schools. The findings of this study suggest that teachers in secondary school settings in New Zealand remain professionally unequipped to effectively handle the inclusion and at times high demands of the unique needs of students with dyslexia. Changes to the way we approach the diverse needs of all children and adolescents in our training programs, and provision of additional learning for experienced teachers will not only facilitate positive mindsets towards learning, it will open doors for further research and develop a healthier society of learners.

Understanding teacher training in recognition and support of dyslexia is pivotal in evaluating the treatment of the condition in New Zealand. Literacy and learning difficulties are not just a dyslexic issue; the provision of opportunities for teachers to learn how to confront different forms of learning

diversities and difficulties is urgently needed, and apparent in this study. The opportunity to develop purposeful, relevant skills from evidence-based interventions alongside a positive disposition will afford brighter futures for both student and teacher. Targeted funding needs to take place and specialised learning environments or specialised teachers are needed as well as broader knowledge for teachers.

Section Five

Limitations and recommendations for future research

Questions were at times limited in their scope and depth. Gauging what degree of knowledge teachers actually had was restricted and participation of teachers was at the discretion of the principals at each school. Future research could include personal interviews with teachers to acquire more in-depth information. Additionally, a large number of participants came from the Auckland region and the Christchurch earthquake limited access to the biggest city in the South Island. A larger South Island sample size would be recommended for future studies to obtain data more representative of the national teacher population.

For future research, ascertaining class sizes, the statistics of dyslexic teachers and assessing the knowledge of reading and linguistics in teachers would provide more qualitative research. Examining what is actually covered in the curriculum of pre-service teachers would be of use as well as investigating teachers' openness to assess students in varied forms outside of traditional written assessments. Studies of teacher attitude and knowledge involving larger and more varied sample sizes would be essential to establishing exactly where educators are situated with regard to the disability.

Section Six

Concluding statement

On the whole these findings provide strong evidence of positive attitudes of the vast majority of participating teachers. However the reality is that the average education teacher is unprepared to handle the increasing demands of students with learning difficulties in mainstream educational settings; they are unequipped to handle the academic and emotional characteristics of dyslexia within a regular education classroom. With the inclusion of special education students in mainstream classrooms, teachers must have access to professional development and additional teacher support to provide quality education for society's most vulnerable students. What was most evident in the findings was the need recognised by the majority of teachers for further professional development.

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Appendix

Information Letter to Principals

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PARTICIPANT INFORMATION SHEET (PRINCIPAL/BOARD OF TRUSTEES)

Project title: **Teacher knowledge and attitudes towards supporting dyslexic learners in mainstream secondary school education settings**.

Researcher: Rebecca Elias

Dear Principal
Name to be inserted

My name is Rebecca Elias and I am conducting a dissertation project towards my Masters degree at the University of Auckland. I would like to invite your school to assist with a research project looking at the level of teacher recognition and support for dyslexic students across a range of curriculum areas. The project involves a survey in which teachers answer some questions about their knowledge about and attitudes towards dyslexic learners. Teachers will also be asked for their own thoughts on providing support for dyslexic learners.

The online survey will take about 15 minutes. No identifying information, such as names, schools, emails or IP addresses will be collected. The information will be used for research purposes only. All electronic data will be secured by a password system, accessible only to the researcher and her supervisor. All data will be erased six years after publication in academic journals. I intend to publish the anonymised and generalised findings of the study in my dissertation and education journals. The thesis and publications will not identify any individual or schools.

I am seeking your willingness to send an electronic survey link via email, to teachers at your school. I will send the link to the school's office email address on the XX/X/13. 100 teachers in urban and provincial cities will be surveyed. I believe teachers will find the survey interesting and it may help them reflect on some of the students they teach. If you would prefer your school not to participate, it would be appreciated if you could contact me by e-mail or phone so that I can approach another school. Please also contact me if you wish to discuss any aspects of the study. Thank you very much for considering this request.

Yours sincerely,
Rebecca Elias

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APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE on 13/03/2013 for 3 years. Reference 2013/9090.