The role of Disability Service staff in supporting students with dyslexia in Irish higher education institutions

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Declaration/Disclaimer

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Education is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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Table of contents

Declaration/Disclaimer	2
Acknowledgements	3
Table of contents	4
List of tables	
List of figures	14
List of acronyms and abbreviations	15
List of appendices	16
Abstract	
Chapter 1: Introduction	
1.1 Introduction	
1.2 Selection of the research topic and relevance to professional practice	19
1.3 Positionality	20
1.4 Policy context underpinning the research	
1.4.1 Widening participation and inclusive education	
1.4.2 Models of disability	22
1.4.3 Neoliberalism, targets and disability provision	24
1.5 Research rationale	
1.6 Research questions	28
1.7 Brief overview of methodology employed	29
1.8 Outline of the chapters	29
Chapter 2: Literature Review	
2.1 Introduction and information gathering strands	
2.2 Understandings of dyslexia	
2.2.1 Introducing and defining dyslexia	
2.2.2 Dyslexia causal theories	

2.2.3 Dyslexia identification	34
2.2.4 The use of the 'dyslexia' label	36
2.2.5 Models of disability and dyslexia	37
2.2.6 Understandings of dyslexia amongst HE staff and students	38
2.2.7 Sub-section summary	40
2.3 Current HEI Disability Service provision for students with dyslexia	40
2.3.1 Disability and dyslexia statistics in Irish HEIs	40
2.3.2 Accessing support services	42
2.3.3 Disability Service model of support	45
2.3.4 Effective Disability Service supports	46
2.3.5 Disability Service staff	49
2.3.6 Sub-section summary	50
2.4 Move to inclusive supports and practices for students with dyslexia	50
2.4.1 Mainstream learning supports	50
2.4.2 Freely accessible assistive technology	52
2.4.3 Universal Design for Learning	52
2.3.4 Sub-section summary	58
2.5 Summary and analysis through a theoretical lens	58
2.6 Emergent research questions	63
Chapter 3: Methodology	65
3.1 Introduction	65
3.2 Mixed methods design	65
3.2.1 Mixed method strand interaction, priority, timing and mixing	67
3.2.2 Justification for mixed methods approach	67
3.2.3 Mixed method research worldviews	68
3.3 Research Phase 1	69
3.3.1 Research worldview	69

3.3.2 Research method
Construction of the questionnaire: question formats
Construction of the questionnaire: content70
3.3.3 Participants
3.3.4 Procedure
3.4 Research Phase 273
3.4.1 Research worldview73
3.4.2 Research method
Case method 1: staff interviews75
Case study method 2: student interviews76
Case study method 3: document analysis77
3.4.3 Participants
3.4.4 Procedure
3.5 Ethical considerations
3.5.1 Harm
3.5.2 Informed consent
3.5.3 Privacy
3.5.4 Deception
3.6 The impact of Covid-19 on the research procedures
3.7 Summary
Chapter 4: Phase 1 Results
4.1 Introduction
4.2 Response rate
4.3 Demographics
4.3.1 Service setting
4.3.2 Work role
4.3.3 Years' experience

4.3.4 Qualifications
4.3.5 Professional learning / training in dyslexia85
4.4 Data analyses
4.4.1 Individual item response analysis
4.4.2 Analysis by grouping variable
4.4.3 Missing values
4.5 Results
4.5.1 Understandings of dyslexia87
Characteristics of dyslexia
Dyslexia conceptions
4.5.2 Supports for students with dyslexia
Supports for students registered with the service
Supports for lecturers regarding students with dyslexia92
Supports for students with suspected but undiagnosed dyslexia
4.5.3 Access to support
Reasons for non-disclosure
Diagnosis for support
Mainstream versus disability service support95
4.5.4 Universal Design for Learning
UDL and students with dyslexia96
The role of Disability Service staff in implementing UDL97
4.6 Summary
Chapter 5: Phase 2 Results
5.1 Introduction
5.2 Profile of research participants
5.3 Data analysis
5.4 Results

5.4.1 Dyslexia as a condition impacting literacy	106
5.4.2 The impact of dyslexia on areas beyond literacy	107
Cognitive difficulties	107
Time demands / organisational skills	108
Emotional impact	109
5.4.3 A medical model understanding of dyslexia	109
5.4.4 Compensatory strategies to overcome difficulties	110
5.4.5 A neurodiversity perspective on dyslexia	111
5.4.6 Benefits of the dyslexia label	112
5.4.7 Effective Disability Service supports	113
Many students' needs met with lower level supports	113
Beneficial lower level general supports	115
Beneficial higher level supports	116
Shortcomings of mainstream services	117
5.4.8 Difficulties created by model of support	118
5.4.9 Non-disclosure as a result of multiple factors	120
Stigma	120
Lack of awareness of supports	121
Strive for independence	122
5.4.10 Support for students without a diagnosis	122
Dyslexia consultation or screening service	123
Financial support for assessment	
Providing some supports for students without a diagnosis	
5.4.11 UDL as a positive vision for the future	126
UDL desirable	126
UDL as a joint endeavour	128
Lecturer buy-in required	129

UDL complementing not removing dyslexia supports	. 129
5.4 Summary	. 130
Chapter 6: Discussion	. 131
6.1 Introduction	. 131
6.2 Discussion	. 132
6.2.1 How do Disability Service staff and students understand and characterise dyslexia?	. 132
Characteristics of dyslexia	. 132
A nuanced, biopsychosocial understanding of dyslexia amongst staff	. 133
A neurodiversity perspective on dyslexia	. 135
Use of the dyslexia label	. 136
Sub-question conclusion	. 137
6.2.2 How are current disability support provisions meeting the needs of students with dysle	exia?
	. 138
Personal impact of learning and studying with dyslexia	. 138
Core lower level supports	. 139
More intensive supports for some students	. 140
Equity of access to support	. 140
Supporting students without a diagnosis	. 141
Non-disclosure	. 143
Sub-question conclusion	. 144
6.2.3 How do Disability Service staff and students view whole-campus inclusive supports	and
teaching and learning practices for students with dyslexia?	. 145
Mainstream support services	. 145
UDL positivity	. 146
Supports for students with dyslexia in a UDL environment	. 147
Cross-departmental UDL initiatives	. 148
Sub-question conclusion	. 149
6.3 Summary and analysis through a theoretical lens	. 150

6.4 Conclusion	152
Chapter 7: Conclusions and Recommendations	154
7.1 Introduction	154
7.2 Key contributions to knowledge	154
7.2.1 Understandings of dyslexia amongst HE Disability Service staff	154
7.5.2 Understandings of dyslexia amongst students with dyslexia	154
7.2.3 Current supports for students with dyslexia	155
7.2.4 Factors leading to non-disclosure	155
7.2.5 Supports for students without a diagnosis	155
7.2.6 Mainstream services	156
7.2.7 Most valuable UDL guidelines	156
7.2.8 Joint cross-departmental initiatives to implement UDL	156
7.2.9 The third space roles of Disability Service staff	157
7.2.10 The Irish HE model of inclusion	157
7.3. A proposed new model of support for students with dyslexic-type difficulties in Irish HEIs	157
7.3.1 The need for a new model of support	157
7.3.2 A pragmatic system of support for students with dyslexic-type difficulties	158
Strand A: UDL-aligned innovations	159
Strand B: Enhanced mainstream provision	159
Strand C: Individual accommodations	160
7.3.3 Advantages of the proposed model	161
7.3.4 Practical considerations in implementation	162
7.4 Research limitations	163
7.4.1 Research Phase 1 sample size	163
7.4.2 Lack of student voice in Research Phase 1	163
7.4.3 Lack of postgraduate student voice	164
7.5 Research recommendations	164

7.5.1 Recommendations for policy164
7.5.2 Recommendations for practice165
7.5.3 Recommendations for future research166
7.6 Reflexive account and final comment167
7.6.1 Reflexive account
7.6.2 Final comment
References
Appendix A: Literature review search strands1
Database search process1
Library catalogue search process
Policy documents and reports search5
Websites search6
Backward snowballing7
Recommended readings
Combined sources
Appendix B: Phase 1 online questionnaire8
Appendix C: Phase 1 plain language statement13
Appendix D: Phase 1 online informed consent form15
Appendix E: Phase 2 staff interview schedule
Appendix F: Phase 2 student interview schedule
Appendix G: Phase 2 plain language statement (for Heads of Service)
Appendix H: Phase 2 online informed consent form (for Heads of Service) 22
Appendix I: Online case study service checklist
Appendix J: Phase 2 plain language statement (for individual staff members)
Appendix K: Phase 2 online informed consent form (for individual staff members)
Appendix L: Phase 2 plain language statement (for individual students)
Appendix M: Phase 2 online informed consent form (for individual students)

Appendix N: Phase 2 debriefing notice for staff	35
Appendix O: Phase 2 debriefing notice for students	36
Appendix P: Ethical approval	37
Appendix Q: Phase 1 questionnaire SPSS codebook	38
Variable information	38
Variable values	45
Appendix R: Phase 2 reflexive thematic analysis NVIVO codebook	53
Phase 2: Generating initial codes	53
Phase 3: Searching for themes6	60
Phase 4: Reviewing themes6	66
Phase 5: Refining, defining and naming themes6	69
Appendix S: Sample NVIVO visuals	72

List of tables

Table 1: Summary of MacCullagh's (2014) key findings regarding the literature on effective supports
for students with dyslexia
Table 2: Summary of Duggan and Byrne's (2013) key findings regarding the literature on effective
supports for students with disabilities (including but not exclusively those with dyslexia)
Table 3: The UDL principles
Table 4: A summary of the literature findings through the lens of the bioecological framework 61
Table 5: Reasons for mixing methods in the current research study
Table 6: The design of the questionnaire by section
Table 7: Case boundaries 75
Table 8: The design of the staff members and student interviews schedules by section
Table 9: Multiple case sampling strategy 78
Table 10: Participants' work role
Table 11: Participants' highest level of qualification
Table 12: Participants' disability or special education qualification at degree level or higher 85
Table 13: Participants' highest levels of professional learning / training in dyslexia 86
Table 14: Conceptions of dyslexia 89
Table 15: Importance of supports commonly provided to students with dyslexia
Table 16: Importance of supports commonly provided to dyslexia regarding students with dyslexia 92
Table 17: Importance of supports provided for students with suspected but undiagnosed dyslexia. 93
Table 18: Rank-ordered most common reasons for non-registration 94
Table 19: Responses to items relating to the requirement of a diagnosis for access to support
Table 20: Mainstream versus disability service support 96
Table 21: The implementation of UDL and its impact on supports for students with dyslexia
Table 22: The role of Disability Service staff in implementing UDL 98
Table 23: Braun and Clarke's (2020, p. 4) model of reflexive thematic analysis 103
Table 24: A summary of the research findings through the lens of the bioecological framework 151

List of figures

Figure 1: The total number of students registered with disabilities over selected years 1999-2019 41
Figure 2: Students with disabilities by disability category 2019, rounded to nearest percentage 42
Figure 3: The AHEAD proposed model of inclusive practice in higher education in Ireland
Figure 4: The bioecological framework 59
Figure 5: Conceptual framework64
Figure 6: The explanatory sequential mixed methods design66
Figure 7: Conceptual framework70
Figure 8: Key characteristic deficits of dyslexia88
Figure 9: Research Phase 2 data set
Figure 10: Sub-themes under 'The impact of dyslexia on areas beyond literacy'
Figure 11: Sub-themes under 'Effective Disability Service supports'
Figure 12: Sub-themes under 'Non-disclosure as a result of multiple factors'
Figure 13: Sub-themes under 'Finding ways to support non-diagnosed students'
Figure 14: Sub-themes under 'UDL as a positive vision for the future'126
Figure 15: Conceptual framework
Figure 16: Most important form of supports triangulated across Research Phases 1 and 2
Figure 17: Significant factors behind non-disclosure, triangulated across Research Phases 1 and 2 144
Figure 18: Relationship of student teaching and learning recommendations to UDL framework 147
Figure 19: The bioecological framework150
Figure 20: A pragmatic system of support for students with dyslexic-type difficulties

List of acronyms and abbreviations

AHEAD	Association for Higher Education Access and Disability
AT	Assistive Technology
CAST	Centre for Applied Special Technology
DARE	Disability Access Route to Education
DAWN	Disability Advisors Working Network
DES	Department of Education and Skills
DSM-5	Diagnostic Statistical Manual, Fifth Edition
FSD	Fund for Students with Disabilities
HE	Higher Education
HEA	Higher Education Authority
HEAR	Higher Education Access Route
HEI	Higher Education Institution
IQ	Intelligence Quotient
IT	Institute of Technology
MMR	Mixed Method Research
NCSE	National Council for Special Education
RACE	Reasonable Accommodations in Exams
RTI	Response to Intervention
SLD	Specific Learning Difficulty
UDL	Universal Design for Learning
UK	United Kingdom
US	United States
WP	Widening Participation

List of appendices

Appendix A	Literature review search strands
Appendix B	Phase 1 online questionnaire
Appendix C	Phase 1 plain language statement
Appendix D	Phase 1 online informed consent form
Appendix E	Phase 2 staff interview schedule
Appendix F	Phase 2 student interview schedule
Appendix G	Phase 2 plain language statement (for Heads of Service)
Appendix H	Phase 2 online informed consent form (for Heads of Service)
Appendix I	Phase 2 online case study service checklist
Appendix J	Phase 2 plain language statement (for individual staff members)
Appendix K	Phase 2 online informed consent form (for individual staff members)
Appendix L	Phase 2 plain language statement (for individual students)
Appendix M	Phase 2 online informed consent form (for individual students)
Appendix N	Phase 2 debriefing notice for staff
Appendix O	Phase 2 debriefing notice for students
Appendix P	Ethical approval
Appendix Q	Phase 1 questionnaire SPSS codebook
Appendix R	Phase 2 reflexive thematic analysis NVIVO codebook
Appendix S	Sample NVIVO visuals

Abstract

The role of Disability Service staff in supporting students with dyslexia in Irish higher education institutions

By Cillian Murphy

Support for students with dyslexia in Irish higher education institutions is coordinated in a traditional medical model approach to disability provision; students must produce diagnostic evidence to register with their Disability Service. However, recently, approaches to supporting diverse students aligned more closely to the social model of disability have entered the sector through the increased provision of mainstream student services and the introduction of Universal Design for Learning (UDL). This presents a challenge to the traditional dyslexia support role of Disability Service staff. This study explored this evolving role through two sequential research phases: 1) an online questionnaire circulated to Disability Service staff nationally (n=43); and 2) a multi-site case study of three Disability Services involving both staff (n=10) and students (n=12) with dyslexia.

The findings indicate that both staff and students hold nuanced perspectives of dyslexia beyond the parameters of a medical model understanding. Aspects of Disability Service provision were seen as performing well at meeting the needs of students, particularly exam accommodations, assistive technology, permission to record lectures, and lecturer liaison. However, stigma, a strive for independence, and a lack of awareness of supports were provided as the key reasons why some students may choose not to register for support. Disability Service staff are extending their traditional role by providing some supports to students with undiagnosed dyslexic-type difficulties. They are also playing an active role in introducing UDL to their institutions through collaborative cross-departmental initiatives. A number of UDL-aligned innovations were perceived by students as being particularly impactful: recorded lectures; alternative assessment options; and high-quality feedback. There was insufficient evidence to support mainstream services as being adequate for students with dyslexia. Based on these findings, a new system of support for students with dyslexic-type difficulties is proposed that synthesises beneficial aspects of the traditional medical model provision with beneficial social model approaches.

Chapter 1: Introduction

"In order to avail of supports... you need to have a disability, and the only way we can run a Disability Service is to have funding for as many students as are eligible for the funding. So as much as we would like to be able to give supports to anyone who just requested them or needed them, regardless of even not only evidence of disability, but even regardless of even having a disability at all, the practicalities of running the service in the way that we currently run it are that we're somewhat reliant... on the financial structure which is kind of based off the medical model, of a set of limited resources that are cost sensitive or time sensitive, someone controlling them."

- excerpt from Disability Service staff member interview

1.1 Introduction

The provision of supports for students with disabilities in higher education institutions (HEIs) has evolved rapidly since the introduction of a number of key education and disability legislative acts in Ireland at the turn of the century (*Universities Act*, 1997; *Education Act*, 1998; *Equal Status Act*, 2000; *Education for Persons with Special Educational Needs Act*, 2004; *Disability Act*, 2005). There are now specialist Disability or Access Services in HEIs across the state (referred to from hereon as 'Disability Services') providing additional supports for students with formal disability diagnoses (Shevlin *et al.*, 2017; Association for Higher Education Access and Disability [AHEAD], 2020b). These supports come in various forms, including reasonable accommodations in exams and in lectures and individual personal, pastoral and academic support (AHEAD, 2021b).

The number of students registered with these specialist services for disability support has increased dramatically over the past two decades; from just 1,410 in 1999 to 15,696 in 2019 (AHEAD, 2020a). By far the largest cohort of these students with registered disabilities is students with specific learning difficulties (SLDs), accounting for 37.7% of the total number of students with disabilities in 2019 (AHEAD, 2020a). The breakdown within this SLD category between dyslexia, dysgraphia and dyscalculia is not available. However, it is likely that the vast majority of students in this grouping are registered with a dyslexia diagnosis, given that dysgraphia remains "poorly understood and is often underdiagnosed" (Chung, Patel and Nizami, 2020, p. S46) and that children may be over 100 times more likely to receive a dyslexia diagnosis than a dyscalculia diagnosis despite similar prevalence estimates for both conditions (Morsanyi *et al.*, 2018).

Support for students with dyslexia is provided by the aforementioned Disability Services in each HEI, units that are manned by administrative personnel. However, although these Disability/Access Service staff members are classified as administrative personnel they actually occupy rapidly evolving 'third space' roles in modern HEIs with complex responsibilities that span both administrative and academic domains (Whitchurch, 2008, 2012). This small but emerging occupational group of third space HE Disability Service staff is currently underrepresented in the Irish inclusive education and dyslexia research literature.

This research study investigated the evolving role of these Disability Service staff in supporting students with dyslexia, their largest individual disability cohort, in Irish HEIs. This chapter will introduce this study by firstly outlining why the topic was selected by the researcher and its relevance to his professional practice. From there it will analyse the HE disability policy context and connect this to the study's research rationale. Then it will introduce the formal research questions and provide an overview of the methodology employed to answer them. Finally, it will close with an outline of the thesis chapters.

1.2 Selection of the research topic and relevance to professional practice

My fascination with dyslexia practice in the HE sector began a decade ago in 2012, when I was a trainee educational psychologist undertaking my first professional placement in the Disability Service of an Irish university. It was there that I was tasked with conducting my first psycho-educational assessment, of a mature student with suspected dyslexia. I duly conducted the assessment and wrote up my first psychological report, in which I outlined the results of the 'discrepancy model' assessment that I was instructed to use by my supervisor. However, I felt deeply conflicted about undertaking this process, as I was aware that even at that stage the discrepancy model – which will be discussed in further detail in Chapter 2 – had already been widely discredited (Siegel, 1992; Vellutino, Scanlon and Reid Lyon, 2000; Stuebing *et al.*, 2002). I felt that my own professional practice was compromised by being required to conduct an outdated form of assessment on the student.

Following this formative professional experience, I proceeded to investigate, for my master's thesis, the perspectives of Irish educational psychologists on dyslexia assessment. This furthered my interest in dyslexia research and practice. Then, upon graduation, I assumed my first professional role working as a 'Learning Support Officer' in a university Disability Service, primarily supporting students with dyslexia through dyslexia screenings and study skills coaching. I then moved to an Institute of

Technology (I.T.) into an 'Access Officer' role, which was less student-facing and more involved with strategy. In more recent years I have returned to student-facing work in a 'Student Learning Officer' role in another university, in which I provide study skills coaching to *all* students in the institution, not just students with dyslexia or other disabilities.

Through these wide-ranging career experiences over the past decade I have witnessed an evolution of the role of Disability Services in supporting students with dyslexia, as more mainstream supports for these students are now being provided outside of the Disability Service, generating new positions such as the 'Student Learning Officer' role I now find myself in. By undertaking this research project, I hoped to capture the voice of both Disability Service staff members and students with dyslexia on the evolving model of dyslexia support and use this to help guide future practice and policy at both a local level in the HEI where I currently work and also on a national level.

1.3 Positionality

Positionality refers to both the researcher's research worldview and the position that they adopt "about a research task and its social and political context" (Darwin Holmes, 2020, p. 1). The research worldview adopted in the current study is outlined in detail in Chapter 3 and related to the research design employed in this study. However, it is also necessary to outline what position I as a researcher took to the research subject, and it is appropriate to do so here right at the beginning of the thesis to aid transparency from the outset. This statement on positionality is particularly important as I have a professional history as a dyslexia assessor, as a Disability Service staff member and as a staff member of a mainstream support service. These experiences have no doubt shaped my approach to this research subject, and I will now outline three personal reflections based on my professional experience to date in the sector that may impact on my own interpretation of the research results.

The first is that as an educational psychologist charged with assessing dyslexia I have always been cautious about basing professional practice and related SEN decisions around diagnosing dyslexia, given not just the well-documented difficulties in accurate assessment (which are detailed in Chapter 2) but also the issue of inequity of access to psychological assessment and diagnosis for individuals from socioeconomically disadvantaged backgrounds (also covered in Chapter 2). Therefore, one of the primary drivers of this research from the outset was my ambition to find ways that Disability Services can support students with dyslexic-type difficulties that do not solely depend upon formal diagnosis of dyslexia.

The second is that having worked in both Disability Services and mainstream support services in multiple HEIs I have witnessed the disconnect between these services, even though they often serve the same cohort of users. I have witnessed a lack of knowledge regarding dyslexia and general disability supports in mainstream services but also a lack of willingness to share information and a lack of awareness of how mainstream supports work in Disability Services. I've also witnessed these different services marking their ground and either assuming full exclusive responsibility for providing a particular support (such as writing technologies training) or refusing to take on the particular support task as they see it as being the responsibility of the other unit. The net result being that students can end up being passed back and forth between Disability and mainstream services or availing of both services without any coherent approach. Therefore, I entered the study with an ambition of finding out how these units could better work together.

The third and final reflection is that I have personal professional doubts about the feasibility of Universal Design for Learning (UDL; discussed in greater detail in Chapter 2) being implemented in HEIs. I have worked for nearly a decade in the HE student support/disability sector and throughout that time UDL has been trumpeted as the solution to delivering more inclusive educational experience to students with disabilities including dyslexia. However, despite much enthusiasm in the sector I have witnessed little practical progress in bringing the promise of UDL to fruition. Therefore, I also entered this project with the ambition of finding out either how UDL could be more effectively implemented or if there are potentially simpler alternatives to a full UDL revolution that could provide inclusive teaching and learning benefits for students with dyslexia.

These initial reflections are described in order to clarify the position of the researcher and thereby support the transparent presentation of the research study.

1.4 Policy context underpinning the research

1.4.1 Widening participation and inclusive education

Access to HE for students with disabilities is one strand of a national 'widening participation' (WP) movement that has existed in Ireland since the early 1970s with the aim of increasing HE participation amongst traditionally under-represented social groups (Keane, 2013). Initial WP efforts focused primarily on students from socio-economically disadvantaged and ethnic minority backgrounds, but over time students with disabilities emerged as one of the WP programme's target groups "within the context of concerted efforts by many countries to develop and establish more inclusive societies" (Shevlin *et al.*, 2017, p. 159). Within this wider societal ambition for greater social inclusion, Dovigo

(2017, p. vii) posits that a drive for inclusion within education has emerged as a means of addressing "the issues of inequality and injustice that arise from the exclusion of students deemed not suited to fully accessing and participating in education". This inclusion movement has been pioneered at an international level through the publication of a series of key agreements including the Salamanca Statement (United Nations Educational Social and Cultural Organisation, 1994), the Political Declaration of the Council of Europe (Council of Europe, 2003) and the United Nations' Convention on the Rights of Persons with Disabilities (United Nations, 2006; ratified in Ireland in 2018). In the Irish context, national legislation has enshrined the right to education of students with disabilities and obliged educational institutions to meet the needs of these students (*Education Act*, 1998; *Equal Status Act*, 2000; *Education for Persons with Special Educational Needs Act*, 2004; *Equality Act*, 2004; *Disability Act*, 2005).

However, despite the international and national moves towards inclusion, it has "proved to be a complex construct, covering a wide range of phenomena" (Dovigo, 2017, p. vii), meaning that "a definitive definition of inclusion has thus far proved elusive" (Kinsella, 2020, p. 1340). In the HE context, Strnadová, Hájková and Květoňová (2015) argue that there are competing discourses as to the meaning of inclusion and that this has impaired practical progress in meeting the needs of students with disabilities despite the recent rapid increase in their numbers at HE. They highlight (p. 1081), based on the work of Kearney and Kane (2006), two particular representations of inclusion prominent in HE; "(a) inclusion interpretation based on a special education framework and knowledge, and (b) inclusion as meeting the needs of all learners, irrespective of their needs". The former view of inclusion concentrates more on delivering access to educational opportunities to people with pre-identified disabilities, while the latter view of inclusion focuses more on removing barriers to learning within the learning environment so that all students can thrive equally.

1.4.2 Models of disability

As noted by Norwich (2016), the tension between these two views of inclusion in education systems internationally mirrors the tension between the medical and social models of disability, which have been identified by Degener (2016, p. 2) as "the most important models of disability in the English-speaking world". A medical model of disability relies on the classification of an individual's disorder or disease by powerful professional groups such as doctors or psychologists (Norwich, 2016). This is a 'deficit' model that focuses on sickness rather than health; as Thompson (2010, p. 4) puts it, it "views the disabled person, not society, as the problem". This model of disability has traditionally been utilised in an administrative fashion internationally across jurisdictions and in various settings as it

facilitates categorisation of individuals "for inclusion in particular programmes, for benefits and for protection under anti-discrimination laws" (Griffin and Shevlin, 2007, p. 17). As such, while it may be deficit focused, a medical model system of provision does afford people with disabilities some protections and means of access to society that they might not otherwise enjoy. By contrast, the social model views disability as "resulting from the interaction between individuals and their environments rather than as simply arising within the individual" (Frederickson and Cline, 2015, p. 11). Within this model, the emphasis is on society as a whole rather than the individual, with disability used as a term to describe "all the extra difficulties that people with impairments face because society is not organised in ways that take their needs into account" (Griffin and Shevlin, 2007, p. 20). Indeed, the focus of some proponents of this model is on disability "as a social construct" powered by "discrimination and oppression" meaning that the "exclusion of disabled persons from society is politically analysed as the result of barriers and discrimination" (Degener, 2016, p. 3).

In recent years, Ireland has belatedly (in 2018) ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD; United Nations, 2006), an international treaty "to protect and affirm the human rights of people with disabilities" (Irish Human Rights and Equality Commission, 2021, par. 1). This treaty was designed from a social model perspective (Lawson and Beckett, 2021). Therefore, Ireland's ratification of the treaty signals an intention to move towards a social model approach to disability provision across the functions of the state, including education. However, Degener (2017) argues that even states participating in the treaty have found it difficult in practice to move beyond the medical model of disability.

Reflecting this difficulty in transitioning away from a medical model approach to disability, in the Irish HE context it can be argued that institutions are currently stuck between the medical and social models of disability provision. On the one hand, support for students with disabilities is coordinated in a medical model system in line with a view of inclusion as understood through an SEN framework. Disability Services provide reasonable accommodations and supports for individual needs that have been pre-identified via medical or psychological diagnosis (Griful-Freixenet *et al.*, 2017; Association for Higher Education Access and Disability, 2020b). This is tied to the conditions of the 'Fund for Students with Disabilities' provided to institutions by the Higher Education Authority (HEA) to run services, which requires that students "have a verifiable disability" (HEA, 2020, par. 5). On the other hand, there is growing evidence in the sector of more social model type provisions emerging, in line with a view of inclusion as meeting the needs of all learners, irrespective of their needs. Institutions are providing more mainstream rather than segregated supports, such as Writing Centres or Academic Skills Centres (e.g. University College Cork, 2020) and encouraging inclusive teaching and learning

practices that will remove barriers to learning for *all* learners, not just those with disabilities (e.g. University College Dublin, 2020c).

However, although these social model-aligned practices have gradually entered the HE system there is no evidence, yet, of any concerted effort to retire the traditional medical model provision still in place through Disability Services. Indeed, international research in an Australian context, focusing on students with physical disabilities, has demonstrated an emerging model of disability support in the HE sector that pairs individual supports and reasonable accommodations with measures to reduce barriers to learning (Collins, Azmat and Rentschler, 2019). It is possible that this apparent fusion of medical and social model practices might actually be a constructive way forward. Indeed, Norwich (2016, p. 10) argues that there is a "false opposition" between medical and social models of disability and that education systems can successfully synthesise these models of SEN/disability provision in order to meet students' needs. This synthesis can be construed as biopsychosocial in nature. The biopsychosocial model of disability "forms a more integrated and comprehensive concept around disability, encompassing elements from both the social and the medical model" (Petasis, 2019, p. 48). As such, it extends rather than rejects the medical model. It has proven highly successful since its inception in the late 1970s and is "the dominant approach now used within healthcare to define disability" (MacDonald, 2019).

1.4.3 Neoliberalism, targets and disability provision

It can be argued, however, that the ability of HEIs to move away from the strict parameters of the traditional medical model system of support towards a more holistic biopsychosocial approach is limited by the modern WP programme, which dictates the field of play at HEIs on a national level. The modern WP programme is led by the National Access Policy Office, which was established in 2003 in the HEA and has produced three National Access Plans to date covering 2005-2007, 2008-2013 and 2015-19 [progress reviewed and updated 2018-21] (Padden and Tonge, 2018).

It has been argued that the modern WP programme is influenced by broader socio-economic trends, in particular the global discourse of neo-liberalism now prominent in the Irish HE sector (Keane, 2016). According to Hodgins and Mannix-McNamara (2021, p. 1):

Neoliberalism is an ideology and policy model that advocates free trade and market competition... it is underpinned by the values of corporate power and is characterised by unwavering confidence in economic rationality... Neoliberal policy, including deregulation, privatisation, outsourcing and increases in competition in public services, is now ubiquitous in the policy portfolios of many administrations.

Cruickshank (2016, p. 2), writing in the UK context, warns that one notable impact of a neoliberal influence in HE is the creation of an "audit culture" that focuses myopically on metrics and the measurement of outcomes that signal impact. Applying this warning to the Irish WP context, a review of the National Access Plan for Equity of Access to Higher Education 2015-19 (HEA, 2015) and its sister document the Progress Review of the National Access Plan and Priorities to 2021 (HEA, 2018) does indeed suggest that the current WP programme is built around a neo-liberal audit culture. The plan specifies six target cohorts of students (HEA, 2015, p. 34):

- "Entrants from socio-economic groups that have low participation in higher education.
- First time, mature student entrants.
- Students with disabilities.
- Part-time/flexible learners.
- Further education award holders.
- Irish Travellers."

Each cohort of students is provided with a specific numeric increase target, the purpose of which is made clear as being primarily to facilitate a governance by numbers approach: "Having clear targets helps the HEA and the DES [Department of Education and Skills] to assess progress in individual institutions and nationally" (HEA, 2015, p. 34). However, it can be argued that this emphasis on numeric targets encourages HEIs to focus on registering as many students with disabilities as possible (in a typical medical model system) in order to generate hard numbers that denote success, rather than focusing on removing barriers to learning that may mean less students need to avail of segregated disability supports.

At the same time, it is also important to acknowledge that considerable gains have been achieved through the current WP approach that endorses a more medical model provision through its focus on hard figures of students with pre-identified disabilities. The WP programme has dramatically boosted, by more than tenfold, the numbers of registered students with disabilities studying at HE level in a period of only twenty years (AHEAD, 2020a). Indeed, it may be that the WP programme's

concentration on accountable numeric targets has forced institutions to adopt radical solutions to deliver more students with disabilities to HE, primarily through their use of the Disability Access Route to Education (DARE) scheme. Under this scheme, institutions now ring-fence a proportion of their places for school-leavers with disabilities (Irish Universities Association, 2020). Furthermore, the WP programme has driven the tracking of the numbers of students with different categories of diagnosed disabilities in each HEI, which has enabled the compilation of fine-grained access statistics that can be helpful in highlighting the progression rates of different cohorts. For example, the data demonstrating consistently low numbers of students with physical and sensory difficulties has been leaned on to prioritise these groups above others for HE access through the DARE scheme (Access College, 2021). As we move forward under the auspices of the UNCRPD, the challenge will be how to maintain these gains while also delivering a more barrier free inclusive learning experience to students with disabilities including dyslexia at HE level.

1.5 Research rationale

As is evident from Section 1.3 above, the story of students with dyslexia at HE in Ireland is locked within a broader socio-educational policy context that has constrained how Disability Services operate. This in turn has shaped the traditional role that Disability Service staff members have occupied in supporting students with dyslexia (amongst other disabilities). Griful-Freixenet et al. (2017, p. 1628) neatly summarise this role as "identify, label, tutor and accommodate": issues are seen as residing within the student, they have been pre-identified through a static disability diagnosis, and Disability Service staff put in place individual add-on supports to overcome these. The rationale for the current research study is based on three interconnected factors currently challenging this traditional dyslexia support role. Firstly, due to policy changes at school level, there is an increased likelihood that more students with dyslexic-type difficulties will complete secondary school and enter HE without a formal dyslexia diagnosis. While students at primary and secondary level have long been able to access special education teaching resources without a formal diagnosis (Department of Education and Science, 2005), they can now also avail of an exemption from studying Irish (Department of Education and Skills, 2019) and access exam accommodations without a formal dyslexia diagnosis (State Examinations Commission, 2022). This largely removes formal incentives in the system for students to undergo expensive private psychological assessment, which can cost as much as €800 (Dyslexia Association of Ireland, 2020). Under this system it is likely that, over time, fewer students will avail of psycho-educational assessments of dyslexia and fewer students will arrive at HE level with a dyslexia diagnosis even though they may present with dyslexic-type difficulties. This

presents a challenge to HE Disability Service staff in supporting this cohort when they cannot be registered for supports without a formal disability diagnosis.

Secondly, the rise in the number of students with disabilities in HEIs in recent years places a challenge to Disability Service provision overall, and hence the traditional support roles of Disability Service staff, as services are struggling to cope with the large numbers registering for support. This means that it is now necessary to "examine whether the models of support provision are fit for purpose and future-proofed" (Association for Higher Education Access and Disability, 2020a, p. 1). Given that students with dyslexia are by far the largest cohort of all students with disabilities at HE, it is appropriate to examine the model of support provision for this group first.

Thirdly, the gradual introduction of mainstream supports and inclusive teaching and learning practices into the HE sector has implications for the segregated, add-on model of support traditionally provided by Disability Services. Writing Centres, Maths Learning Centres and Student Learning Units open to all students are now increasingly widespread across Irish HEIs (University College Cork, 2020; University College Dublin, 2020b; University of Limerick, 2020). The introduction of these new mainstream units has a potentially significant impact on what support for students with dyslexia is provided by Disability Service staff and what is provided by staff from other mainstream units across an institution. Furthermore, there has also been a significant recent push to embed universal design for learning (UDL; Centre for Applied Special Technology, 2018) principles into teaching and learning practices across the HE system in order to meet the needs of diverse learners such as those with dyslexia, potentially reducing the need for add-on additional supports of the likes traditionally provided by Disability Services (AHEAD, 2017). This UDL push has been fronted by Disability Services in some institutions (University College Dublin, 2020c) but also by Teaching and Learning units in other institutions (Dublin City University, 2020d). The role that Disability Service staff will take in this push for UDL implementation going forward across the sector is currently unclear, as is the impact this implementation will have on their work supporting students with dyslexia.

These factors in combination mean that a review of the role of Disability Service staff in supporting students with dyslexia is both timely and necessary. It is also important to highlight that the perspectives of Disability Service staff on HE dyslexia provision is largely missing from the HE dyslexia literature, despite them being the key professionals in this educational setting tasked with supporting students with dyslexia. This study aimed to address this research lacuna by targeting in particular the views of these stakeholders on dyslexia provision, triangulated with a student voice in the Irish HE context.

1.6 Research questions

The current study addressed the following research question:

What is the role of Disability Service staff in supporting students with dyslexia in Irish higher education institutions?

The research sub-questions were as follows:

- 1. How do Disability Service staff and students understand and characterise dyslexia?
- 2. How are current disability support provisions meeting the needs of students with dyslexia?
- 3. How do Disability Service staff and students view whole-campus inclusive supports and teaching and learning practices for students with dyslexia?

The study aimed to use the research findings to identify what aspects of the traditional Disability Service dyslexia support role should be maintained and how this role can evolve as HEIs gradually adopt more practices aimed at reducing barriers to learning for all students, including those with dyslexia.

The research focus and resultant research questions were arrived at following several months of work. Initially, following a preliminary review of the literature for the study's detailed research proposal (a graded module assessment in Year 2 of the Doctorate of Education programme), the study's focus was just on Disability Service staff members' perspectives on dyslexia and dyslexia support provisions. Over time, following the completion of the study's formal literature review and further in-depth discussions with the study's supervisors, this research focus was modified. It became evident that there was a lack of previous research in the field that combined the perspectives of both Disability Service staff members and students with dyslexia themselves on dyslexia provision. It also became evident from the literature that the role of staff members in this space was likely changing rapidly. Therefore, the study's focus evolved to instead examine the overall role of Disability Service staff members in supporting students with dyslexia, from the perspectives not just of staff members but also of students with dyslexia themselves. This dual focus on both staff *and* student perspectives as well as the new emphasis on the staff members' evolving support role in turn led to the final wording of the research sub-questions, which endeavoured to shed some light on some of the key themes that had emerged from the literature in relation to the role of Disability Service staff in supporting students with dyslexia.

1.7 Brief overview of methodology employed

A mixed method explanatory sequential design was employed to investigate this research question over two separate research phases. Phase 1 involved the circulation of an online self-administered questionnaire survey to a total population sample of HE Disability Service staff in Ireland. The results of this research phase were analysed and influenced the roll out of Phase 2 of the project, a multiplecase study analysis of three Disability Services in three separate HEIs; two universities and one Institute of Technology. These case studies captured the views of both staff and students on the topic through semi-structured interviews and through analysis of official documents available on each service's website. The results of these research phases were analysed separately and then brought together in a final overall analysis of findings.

1.8 Outline of the chapters

The current chapter, Chapter 1, outlines an introduction to the research study. Chapter 2 provides a review of the literature on the topic and presents the study's conceptual framework. Chapter 3 outlines the research methodology employed. Chapters 4 and 5 detail the Research Phase 1 and Research Phase 2 results obtained respectively, while Chapter 6 provides a discussion of these results. Finally, Chapter 7 summarises the study's contribution to knowledge, presents a new proposed model of support for students with dyslexic-type difficulties in Irish HEIs and discusses the implications of the research findings for practice, policy and future research.

Chapter 2: Literature Review

2.1 Introduction and information gathering strands

This literature review aims to identify existing knowledge and gaps in the research field (Mengist, Soromessa and Legese, 2020) and to hence elucidate "why the study is being undertaken and why it is adding to the store of knowledge" (Gray, 2014, p. 648). The findings of this review will be reported thematically under three headings below: Understandings of dyslexia; HEI Disability Service provision for students with dyslexia; and Move to inclusive supports and practices for students with dyslexia.

Six information-gathering strands were employed in the review process:

- 1. Systematised database search
- 2. Systematised library catalogue e-book search
- 3. Policy documents, reports and publications review
- 4. Websites of governmental bodies, HEIs and special interest groups review
- 5. Recommended readings
- 6. Backward snowballing

The search processes followed under each strand are detailed comprehensively in Appendix A.

2.2 Understandings of dyslexia

The first theme reviewed relates to the current understandings of dyslexia prevalent in the research field and also amongst HE staff and students. The following topics will be discussed in turn: Dyslexia definitions; Dyslexia causal theories; Dyslexia identification; The use of the dyslexia label; Dyslexia and models of disability; and Understandings of dyslexia amongst HE staff and students.

2.2.1 Introducing and defining dyslexia

The term 'dyslexia' was first used by Rudolf Berlin in 1887 to describe patients who had suffered brain lesions and lost their ability to read (Elliott and Grigorenko, 2014). Stein (2018) outlines how this likely led to the term 'developmental dyslexia' first being utilised by a British GP named Pringle Morgan in the 1890s to describe an extremely bright teenage patient who struggled to read and write. Stein posits that from this point at the turn of the 19th century onwards the core criteria for dyslexia became poor reading skills with average or above general cognitive skills, with a likely genetic basis.

Despite the term 'dyslexia' being in existence since the late 1800s, an agreed definition of the condition has remained elusive to the present day, which "represents a fundamental problem for the field" (Wagner *et al.*, 2019). The dominant conceptualisation of the condition for many years was the discrepancy model, which emerged in the 1960s (Shah *et al.*, 2019) and held sway until the early years of the 21st century (Aaron *et al.*, 2008). The discrepancy model identified dyslexia when a statistically significant discrepancy existed between an individual's predicted reading levels (based on a global IQ score) and their actual reading levels (Caravalos *et al.*, 2012). It has now been discredited for a number of reasons, including the low correlation between IQ and reading ability (Joshi and Aaron, 2008) and the lack of difference in reading profiles between students with and without discrepant IQs (Stuebing *et al.*, 2002).

Echoes of the discrepancy model are still apparent though in the definition put forth by the report of the Task Force on Dyslexia in Ireland in 2001, the most recent official dyslexia report in the Irish context:

Dyslexia is manifested in a continuum of specific learning difficulties related to the acquisition of basic skills in reading, spelling and/or writing, such difficulties being unexplained in relation to an individual's other abilities and educational experiences. Dyslexia can be described at the neurological, cognitive and behavioural levels. It is typically characterised by inefficient information processing, including difficulties in phonological processing, working memory, rapid naming and automaticity of basic skills. Difficulties in organisation, sequencing and motor skills may also be present. (Task Force on Dyslexia, 2001, p. 28)

As is evident, this definition combines an element of the discrepancy model ("such difficulties being unexplained in relation to an individual's other abilities and educational experiences") with a list of other cognitive/behavioural factors commonly cited in the research field as features of dyslexia.

In the UK context, the British Dyslexia Association (2010) has adopted the definition espoused in the influential Rose Report of 2009:

Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Characteristic features of dyslexia are difficulties in

31

phonological awareness, verbal memory and verbal processing speed. Dyslexia occurs across the range of intellectual abilities. It is best thought of as a continuum, not a distinct category, and there are no clear cut-off points. Co-occurring difficulties may be seen in aspects of language, motor co-ordination, mental calculation, concentration and personal organisation, but these are not, by themselves, markers of dyslexia. A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to well-founded intervention. (Rose, 2009, p. 30)

This definition veers away very strongly from any notion of discrepancy by stating that the condition "occurs across the range of intellectual abilities". It forefronts the phonological deficit theoretical account of the condition (see Section 2.2.2. below) to such an extent that the British Dyslexia Association (2010, par. 6), while supporting this definition, clarifies that it also adds additional characteristics in line with sensory rather than phonological deficit accounts; "in addition to these characteristics... the British Dyslexia Association (BDA) acknowledges the visual and auditory processing difficulties that some individuals with dyslexia can experience". It also stresses, through its reference to "co-occurring difficulties", what Reid (2016, p. 336) refers to as the "overlap" between dyslexia and other learning challenges. Reid identifies these commonly co-occurring learning challenges principally as attention, movement and coordination, auditory processing and numerical difficulties.

It is apparent that the definitions of dyslexia drafted in the early 2000s, and still in use today, started to become extremely long and complicated in attempting to capture all potential aspects of the condition. This may be due to the heterogeneous nature of its presentation amongst different individuals (Łockiewicz, Bogdanowicz and Bogdanowicz, 2014). By contrast, some modern neuroscience research papers simply sidestep the definition controversies and revert to traditional discrepancy-based conceptualisations of dyslexia (e.g. Centanni *et al.*, 2016; Fiveash *et al.*, 2020). Overall, what emerges is a fractured research field that cannot decide upon a working definition. However, for the purpose of the current study, due to it being the most recent definition employed in an official state report in the Irish context, the definition put forth by the report of the Task Force on Dyslexia in Ireland in 2001 outlined above will be utilised.

The difficulty in defining dyslexia leads to corresponding difficulties in estimating prevalence in the population, as any such estimate is dependent upon how the condition is operationalised (Callinan, Cunningham and Theiler, 2013). The International Dyslexia Association cites a prevalence of 15-20% (2020). However, "dyslexic difficulties occur on a continuum from mild to severe" (Dyslexia Association

32

of Ireland, 2021, par. 2) and if a cut-off point for severity of reading difficulties in dyslexia is set at 1.5 standard deviations or more below the mean then the population prevalence estimate drops to 7% (Peterson and Pennington, 2015). These differences in prevalence estimates emphasise the importance of a broadly accepted, standardised operationalisation of the condition for epidemiological purposes. Though, as has already been outlined, a broadly accepted characterisation of dyslexia remains elusive.

2.2.2 Dyslexia causal theories

Numerous theoretical accounts of the causes of dyslexia have been put forth. It is beyond the scope of this literature review to detail them all (see Peterson and Pennington, 2015 for a recent overview). However, as noted by Danelli *et al.* (2017), four leading theories of dyslexia exist in the literature - the phonological deficit theory, the magnocellular theory, the visual-spatial attention theory, and the cerebellar deficit hypothesis - and these shall briefly be outlined below to provide an insight into the key areas of theoretical debate.

The phonological deficit model purports that the behavioural symptoms associated with dyslexia are caused by "difficulties in the speech-sound (or phonological) system of language" (Caravalos et al., 2012, p. 8). In simple terms, it posits that "children with dyslexia form mental representations of the sounds of language that are poorly specified or 'fuzzy' which makes it difficult to develop an awareness of the internal sound structures of words and to learn letter-sound relationships" (Frederickson and Cline, 2015, p. 370). The magnocellular theory, by contrast, seeks to explain the behavioural features of dyslexia through root causes in the visual system. As Reid, (2016, p. 20) explains; "there are two types of cells found in the neural tracts between the retina and the visual cortex: magnocells are large cells that code information about contrast and movement; parvocells are smaller and code information about detail and colour". According to the magnocellular theory, reading difficulties occur during transitions or saccadic eye movements that involve the magnocellular system. The magnocellular system is failing to do its job to suppress the parvocellular system during these transitions, which leaves a longer than usual visual trace and causes visual acuity problems when reading text (Vellutino et al., 2004). The visual-spatial attention theory, like the magnocellular theory, also focuses on the visual system, but seeks to explain dyslexic-type difficulties through "an impaired ability to orientate visual attention" (Goswami, 2015, p. 47) rather than through impairments in the magnocellular system. And the cerebellar deficit theory claims that the phonological deficits apparent in dyslexia "may arise initially from inefficient articulatory control attributable to cerebellar impairment" that also affects other domains such as motor skills (Fawcett, Nicolson and Dean, 1996, p. 259).

There is a wealth of research behind each of these models and continued ongoing academic debate as to their relative merit (e.g. Caravalos *et al.*, 2012; Stein, 2018). What is most relevant to take from this, for the purpose of the current research study, is that, just like there is a lack of consensus on how to define dyslexia, there is a lack of consensus on whether there is one single cause of the condition (Lopes *et al.*, 2020). This has led some researchers (e.g. Pennington, 2006; Ring and Black, 2018) in recent years to attempt to construct a complex multiple deficit model of dyslexia that strives to "acknowledge that the aetiology of the problem is multifactorial, that comorbidity is the rule, not the exception, and that the distribution of the disorder is often continuous, not discrete" (Lopes *et al.*, 2020, p. 4). This work is promising but in its infancy.

2.2.3 Dyslexia identification

The identification of dyslexia was dominated for the latter part of the twentieth century by the discrepancy model (Aaron *et al.*, 2008). However, as noted in Section 2.2.1 above, the discrepancy model has now been widely discredited (Stuebing *et al.*, 2002; Vellutino *et al.*, 2004; Joshi and Aaron, 2008). In a move away from the use of the discrepancy model in dyslexia identification, many jurisdictions have now embraced the Response to Intervention (RTI) approach at primary and post-primary school level.

The Response to Intervention (RTI) model refers to a process that highlights how well students respond to changes in instruction in the classroom. Individual students' progress is monitored and results are used to make decisions about further instruction and intervention. Essentially, schools can use the RTI process to help students who are struggling academically or behaviourally and to identify students who may have learning disabilities. (Australian Federation of SPELD Associations, 2022, par.1).

This RTI approach has been adopted in the UK (Frederickson and Cline, 2015), where it also influenced the wording of the definition of dyslexia employed by the seminal Rose report: "A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual *responds or has responded to well-founded intervention*" [italics added] (Rose, 2009, p. 30). In the Irish context, it has influenced the Continuum of Support model at primary and secondary level (National Council for Special Education, 2020). The benefits of the RTI approach are that it no longer requires the use of IQ as an exclusionary criteria and provides intervention to students who require it without

needing diagnostic labels to access support (Frederickson and Cline, 2015). It has been argued, however, that RTI should be used as a precursor to psychometric assessment rather than a tool of identification itself (Callinan, Cunningham and Theiler, 2013). Furthermore, as a school-based system it is of limited relevance to adult learners at HE who are the focus of this study.

While the RTI approach is commonly adopted by school systems for the identification and intervention of literacy difficulties, psychologist assessors most commonly refer to The Diagnostic Statistical Manual of the American Psychiatric Society for dyslexia assessment criteria. The most recent edition, the DSM-5, was published in 2013. Reid (2016, p. 17) posits that, due to there being no consensus on what constitutes 'dyslexia', "the contributors to DSM-5 opted not to use the term dyslexia but rather to opt for 'specific learning disorder' as an umbrella term". Underneath this 'specific learning disorder' umbrella term the DSM-5 specifies a number of impairments; reading, written expression and mathematics (American Psychiatric Association, 2013). The DSM-5 stipulates four key criteria for diagnosis of a specific learning disorder:

- Criterion A lists the characteristics of SLD and states that the difficulties must have been in existence for at least six months and resistant to intervention;
- Criterion B states how to measure those characteristics, specifying that they must be significantly below age levels and cause functional impairment;
- Criterion C refers to age of onset and states that difficulties usually commence in the early school years, with the caveat that they may only come to the fore in the later school years under the demands of more complex academic work;
- Criterion D states other conditions or factors including psycho-social adversity and inadequate educational instruction that must be ruled out as accounting for the difficulties observed.

As noted by Shah *et al.* (2019), reference to the discrepancy model has been removed in the DSM-5 criteria. At the same time, inclusion of resistance to intervention and symptom persistence for a period of at least six months are new RTI-style additions. It can be observed, however, that the DSM-5 criteria are best suited to a school-age student; a psychologist assessing an adult student at HE level would likely struggle to meet these criteria as they will rarely have access to objective evidence of length of symptom persistence, age of onset, adequate educational instruction, or resistance to high quality intervention over time.

Overall, it is clear there are issues with all of the common approaches to dyslexia identification, in particular for adult students who have not previously been diagnosed with dyslexia during childhood.

2.2.4 The use of the 'dyslexia' label

As is evident from the literature reviewed thus far, there is a lack of consensus in the dyslexia field on practically every aspect of dyslexia: how to define it; what causes it; and how to reliably identify it. This has led Elliot and Grigorenko (2014) to argue for a re-think of the use of the 'dyslexia' label, positing that it "should be recognized as inadequate for both classification and diagnosis" (p. 178). Elliot and Grigorenko (2014, p. 178) further highlight that, at a practical level, in educational systems with limited resources, "dyslexia is a diagnosis that may have adverse consequences" as "the label may serve to exclude those with reading difficulties who for various reasons (social, economic, political) fail to obtain the label". They argue that the continued use of the attractive 'dyslexia' label helps sustain a massive industry in assessment, diagnosis and treatment that is more accessible to some families and individuals than others. This industry is indeed readily apparent in the Irish context, where private assessments typically cost in the region of €500-€800 (Dyslexia Association of Ireland, 2020). While Elliot and Grigorenko's position regarding the use of the dyslexia label was still controversial at the time, eliciting "a flurry of reactions from all over the world" (van Daal, 2015, p. 22), Ryder and Norwich (2018, p. 161) argue that "dyslexia's invalidity as a diagnostic category with a scientific basis is now widely acknowledged amongst most eminent researchers". However, Ryder and Norwich may be overstating this consensus, given the ongoing academic debate regarding the use of the dyslexia construct (Snowling, 2015; Davis, 2016; Elliott, 2020) and that many modern neuroscientific research studies still unquestioningly utilise participants with diagnosed 'dyslexia' (e.g. Schurz et al., 2015; Di Liberto et al., 2018; Fiveash et al., 2020).

It is also important to note that the use of the dyslexia label may also be beneficial for individuals. Soni (2017) conducted a small-scale study in the UK context exploring the lived experiences of HE students identified as having dyslexia, in order to ascertain whether the dyslexia label was a useful construct in their student lives. She found that students who had been diagnosed earlier in life at primary level had more positive educational experiences, had received more support throughout their education and "displayed greater self-advocacy skills" (p. 397). By contrast, those who had been diagnosed at late secondary school or university level had more negative educational experiences, remembering being labelled as naughty or lazy when struggling with reading and spelling. Soni also found that all participants were extremely positive towards the label and welcomed it as part of their identity; *"actually I like being dyslexic it's like part of me"* as one student put it (p. 398). These findings indicate
that the dyslexia diagnostic label may indeed benefit those students who are lucky enough to secure it early in life.

2.2.5 Models of disability and dyslexia

It is therefore evident that there are ongoing debates in the field as to how dyslexia should be defined and identified and whether it should even still be employed as a diagnostic label. Against this backdrop, there has been a shift in the models of disability utilised to understand dyslexia. Traditionally, a medical model approach has been utilised to understand dyslexia (MacDonald, 2019). As explained by Frederickson and Cline (2015, p. 11), "a traditional medical model of disability focuses on impairments in the body and mind of the disabled person, describes these solely as limitations on normal functioning and places an emphasis on 'cure' and 'rehabilitation'". Applying this medical model of disability to dyslexia leads to an understanding of dyslexia as deviation from normal literacy functioning "resulting from a genetic and/or neurological defect" (MacDonald, 2019, p. 5). Furthermore, the condition is considered to be permanent (MacDonald, 2019). According to this understanding, dyslexia can be neatly identified via a static diagnosis and thereafter 'cured' or 'rehabilitated'. The focus therefore rests on changing the individual rather than the environment within which they function.

By contrast, the social model of disability places great emphasis on the difference between impairment and disability (Frederickson and Cline, 2015). Impairment is the physical difference or variation that a person may experience, but disability is the difficulties they experience as a result of the barriers to functioning created by the environment they find themselves within. From this perspective, "impairment (i.e. the label of dyslexia) is irrelevant compared to disability (i.e. the effect of a disabling educational system)... therefore, from a social model perspective, professional practice must focus on removal of barriers that exclude people with dyslexia, rather than on impairment-related interventions" (MacDonald, 2019, p. 10-11).

However, these two contrasting models of dyslexia do not necessarily have to stand in opposition to each other. Indeed, MacDonald notes (2019, p. 1) that of late there has been a "shift to expand/reject" a purely medical-model view of dyslexia "and to incorporate the social and psychological aspects of dyslexia" and factor in the influence of the environment on the manifestation of an underlying neurological dysfunction. This 'biopsychosocial' approach acknowledges the interaction of innate and environmental factors on the manifestation of dyslexia in an interactionist model, while also stressing that "symptoms of dyslexia can be reduced or exaggerated by access to inclusive or exclusive educational environments" (MacDonald, 2019, p. 7).

Alongside these competing mainstream models of disability that are frequently applied to dyslexia, it is also important to highlight the neurodiversity perspective on dyslexia which has grown in profile in recent years (Elliott, 2020). MacDonald (2019) identifies this neurodiversity perspective as a variation on the social model that emerged initially in the United States amongst the autism community but has since been applied to other conditions such as Attention Deficit Hyperactivity Disorder and dyslexia. As noted by MacDonald, the neurodiversity perspective is similar to the social model in that it views difficulties commonly associated with dyslexia as resulting from structural barriers but differs from the traditional social model in that it outright rejects notions of 'impairment' or 'disability'. Rather, it "focuses on differences in individual brain function and behavioural traits, regarded as part of normal variation in the population" (Clouder *et al.*, 2020, p. 758). Moving away from these notions of 'impairment' or 'disability', a neurodiversity conceptualisation of dyslexia indeed sometimes divorces dyslexia from literacy concerns, with a view that dyslexia can be diagnosed if an individual's cognitive profile matches a typical dyslexic profile even in the absence of significant literacy difficulties (Elliott, 2020). Furthermore, dyslexia is seen as having positive aspects too such as enhanced abilities in other areas of learning and creativity (Clouder *et al.*, 2020).

2.2.6 Understandings of dyslexia amongst HE staff and students

The multiple ongoing debates regarding dyslexia characterisation, causation and identification, and the multiple different models of disability used to understand dyslexia, set up an interesting set of questions for any study into dyslexia practice at HE level. What characteristics of dyslexia do staff and students see as key to the condition and how do these relate to prominent definitions? Do they see dyslexia as a valid and useful diagnostic label or one that has outlived its utility? Do they view dyslexia overall through a more medical model, social model, biopsychosocial model or neurodiversity lens? Unfortunately, despite these intriguing questions, "there has been very little investigation into the views and perspectives of university staff about dyslexia" (Stampoltzis *et al.*, 2015a). What recent literature that was unearthed as part of this review concentrated primarily on academic staff in papers by Stampoltzis *et al.* (2015a), Schabmann *et al.* (2020) and Ryder and Norwich (2019).

Stampoltzis *et al.* (2015a) conducted a small-scale online questionnaire research study amongst just 19 lecturers in one Greek HEI to investigate their perspectives on dyslexia. The results revealed (p. 595) "moderate to high level of knowledge of dyslexia, concerning the definition, symptomatology and etiology of the condition" when the lecturers were questioned on their dyslexia knowledge through their responses to closed questions exploring these areas. However, the study's small sample size (19 lecturers; 10% response rate) and single HEI location of the study limit the generalisability of its findings. Schabmann *et al.'s* (2020) questionnaire study was conducted again only in one HEI, this time in Germany, and again with a low response rate (3.72% of lecturers) but with a higher total number of respondents (n=234) due to the large size of the institution. This study again focused on assessing lecturer dyslexia knowledge through their agreement with closed question items. The findings revealed (p. 279), similar to Stampoltzis *et al.* 's (2015a) study, that lecturers had "relatively good basic (declarative) knowledge about dyslexia". However, the results also revealed that the lecturers did not know how to adequately support the additional needs of students with dyslexia. The fact that the study again only featured one research location also limits the generalisability of its findings, as does the over-representation within the participant sample of staff from some faculties such as humanities and under-representation of staff from other faculties such as maths/natural sciences.

Of more relevance to the current study was Ryder and Norwich's (2019) online questionnaire on perspectives of dyslexia completed by 164 academics across 12 UK universities. This revealed (p. 166) "much confusion as to what the construct [i.e. dyslexia] actually was and how it affected their diagnosed students". Forty percent of respondents were concerned about the apparent heterogeneity of dyslexia, 35% had doubted a student's dyslexia diagnosis, 46% agreed that they were confused as to the difference between students with dyslexia and students who had ineffective literacy/study skills due to past poor or missed educational opportunities, and 36% were confused between dyslexia and low ability. Ryder and Norwich note (p. 167) that "there appeared to be minimal support for the social model of disability as it applied to dyslexic students", with only 22% of respondents seeing students' difficulties with literacy as being created by their institution. Overall, the study revealed, in the authors' own words (p. 169), "significant confusion about the concepts of disability and dyslexia" (p. 167) and that lecturers held a "predominant erroneous perception of a categorical medical model of dyslexia in the face of the research field's acknowledgement of a more interactive one".

It is important to highlight that no similar recent research was identified that investigated Disability Service staff members' understandings of dyslexia, despite their role as the key personnel staffed with supporting students with dyslexia in the HE environment.

In terms of students, Soni's (2017) aforementioned small-scale study amongst HE students in the UK found that the students regarded their label of dyslexia as a difference rather than a disability or neurological condition. A similar small-scale qualitative study in a Greek university also found that students with dyslexia "see dyslexia as a different way of thinking which endows the person with several career advantages" (Stampoltzis *et al.*, 2015b, p. 167). In the Irish context, another small qualitative study of students with dyslexia in a university setting also found that "their conceptualisation of dyslexia was that of 'difference' as opposed to a 'disorder'" (O'Byrne, Jagoe and

Lawler, 2019, pp. 1037-38). These findings in combination indicate that students with dyslexia tend to hold a view of the condition in keeping with the neurodiversity perspective on dyslexia.

2.2.7 Sub-section summary

There is a lack of consensus in the research field on how to define dyslexia, what causes it and how to identify it. In light of these challenges, the ongoing use of the dyslexia diagnostic label has been challenged. Against this backdrop, different common models of disability have been applied to dyslexia. More nuanced understandings beyond the traditional medical model are becoming increasingly prominent, but previous research amongst HE lecturing staff indicates a lasting allegiance to a medical model understanding, even while students look towards a more neurodiversity perspective. More research is required to ascertain HE Disability Service staff members' understandings of dyslexia.

2.3 Current HEI Disability Service provision for students with dyslexia

The second theme reviewed relates to current HE Disability Service provision for students with dyslexia. The following topics will be discussed in turn: Disability and dyslexia statistics in Irish HEIs; Accessing support services; the Disability Service model of service delivery; and Disability Service staff.

2.3.1 Disability and dyslexia statistics in Irish HEIs

Each HEI in the state provides a Disability Service to students with disabilities (Shevlin *et al.*, 2017). The number of students with disabilities registered with Disability Services for support has increased more than tenfold over the last two decades. In 1999 there were just 1,410 students with identified disabilities registered for support, representing 1.1% of the student body; by 2019 this number had risen to 15,696 students, representing 6.2% of the student body (Figure 1: AHEAD, 2020a, p. 8). However, it is important to note that the proportion of students registered for disability support is far higher across all disability categories at undergraduate level (7.1% of the student body) than it is for students at postgraduate level (2.4% of the student body) (AHEAD, 2020a).



Figure 1: The total number of students registered with disabilities over selected years 1999-2019

AHEAD gathers these statistics on an annual basis from 25 HEIs across the state and also gathers statistics by disability category. The figures for 2019 reveal that by far the largest disability category is 'specific learning disabilities', with 37.7% (5,718) of all students registered with Disability Services nationally falling into this category (Figure 2: adapted from AHEAD, 2020a, pp. 14–15). Although this category captures students with dyslexia, dyscalculia and dysgraphia, and there is no further breakdown between the conditions provided in the figures, it is likely that the vast majority of these registrations pertain to students with dyslexia. When this is broken down by level of study, 38.7% of students with disabilities at undergraduate level are registered under the SLD category along with 37.6% of postgraduate students.





2.3.2 Accessing support services

Students make their way to HEI Disability Services via two principal pathways: through the Disability Access Route to Education (DARE) scheme when transitioning from second level to HE or through selfdisclosure at any point in their HE student journey. The first pathway to support, the DARE scheme, is coordinated by the Irish University Association (2020). Under this scheme, individual institutions ringfence a proportion of places on their courses for students with diagnosed disabilities. Students with disabilities then compete with each other for access to these ring-fenced places on the basis of their terminal school exam scores (Shevlin et al., 2017, p. 162). When students are offered a place at their HEI of choice, Disability Services are alerted to their application status via the DARE scheme and typically invite them to register for support at that stage. Research has indicated, however, that the DARE scheme is far from equitable in terms of which socio-economic groups typically apply to it, with analyses of the scheme by Byrne et al. (2014) and Nic Fhlannchadha (2018) indicating a higher proportional rate of applications from students from fee-paying schools. It is likely that students who can best afford private disability assessments (particularly private dyslexia assessments, given the high proportion of students falling into this disability category) can best avail of the DARE scheme to secure a HE place. This aligns with Elliot and Grigorenko's (2014) argument (discussed in Section 2.2.4 of this review) that the continued use of the dyslexia label can have adverse effects for those who cannot access it due to social/economic/political reasons and that it supports an ongoing assessment industry with negative consequences for families who cannot afford it.

The second pathway to disability support is via self-disclosure. Students can disclose a disability at any stage of their studies, undergraduate or postgraduate, once they provide evidence of their condition (AHEAD, 2020b). International research indicates, however, that students with disabilities can be reluctant to disclose their disability conditions and avail of support (De Cesarei, 2015). In the U.S. context, Newman and Madaus (2015) tracked a cohort of 3,190 students with disabilities from the school system through to the post-secondary system in an attempt to put some figures on the issue. They found that only 35% of students with identified disabilities at school level disclosed their needs to their post-secondary institution, and that only 24% actually availed of disability supports. By contrast, 98% of this group had accessed supports in secondary school. These figures indicate an extremely high rate of non-disclosure. Reflecting on this finding, Newman *et al.* (Newman *et al.*, 2020. p. 1) stress that "the majority of students with disabilities are not known by college and university disability services offices".

It appears that there may be several factors underpinning this pattern of non-disclosure. Aquino and Bittinger (2019) highlight that one factor may be students going from having a school support team looking out for their needs to having to actively pursue self-disclosure and advocate for their own support needs. De Cesarai (2015) adds that reluctance to disclose may be related to self-esteem and disability identity which are influenced by negative experiences over a lifetime in the education system. In studies conducted amongst students themselves, Hong (2015) found that some students with disabilities were not sure of the benefits of disclosure seeing as they were uncertain of how effective supports would be or how lecturers would respond. She also found that they were scared of being treated differently by lecturers or peers, and that some had a desire to strike out independently if they had endured a negative experience of 'special education' support at school level, for example through being visibly pulled out of class for additional teaching. Eccles et al. (2018) found that terminology played a role in erecting barriers to seeking support. In particular, Eccles and colleagues found that students did not necessarily regard invisible conditions such as specific learning difficulties/dyslexia as 'disabilities' and some students did not identify as 'disabled'. They also found that students were fearful of being stigmatised in their institution if they proceeded with disclosing their diagnosis.

There is no available research into rates of non-disclosure in Irish HEIs, though based on the available figures in the AHEAD annual sector statistics it is likely to be a significant issue. Currently, 6.2% of students nationally are registered with disabilities, and 37.7% of these are registered with SLD (AHEAD,

2020a). This equates to less than 2.5% of the total student population. While this figure captures dyslexia, dyscalculia and dysgraphia, even if it was just students with dyslexia it would still be significantly below population estimates for the condition, which range between 7% and 20% (Peterson and Pennington, 2015; International Dyslexia Association, 2020). Of course, this low proportional representation of students with dyslexia in the general student body may be due to lower HE access rates for this cohort. Likewise, it could potentially be attributed to students with dyslexic-type difficulties being present in the general student body but never having availed of psychoeducational assessment due to its prohibitively high cost. Despite these possibilities, the figure is still lower than would be expected. Based on these statistics, it is therefore likely that there is a sub-cohort of students with dyslexia in the Irish HE system who have not disclosed their diagnosis to register for disability support.

Whatever avenue by which students find their way to their Disability Service, be it via the DARE scheme or via self-disclosure, they must provide disability documentation in order to register for supports (Association for Higher Education Access and Disability, 2020b). In terms of students with dyslexia this is a psychologist's or accredited PATOSS (the Professional Association of Teachers of Students with Specific Learning Difficulties) assessor report (HEA, 2021a). It is worth stressing the disconnect between the support system for students at primary and secondary level and that in HEIs: at primary and secondary level students with dyslexic-type difficulties can receive special education teaching resources and exam accommodations without requiring a formal diagnosis of dyslexia (Department of Education and Skills, 2017b, 2017a; State Examinations Commission, 2022), while in HEIs students require formal diagnostic evidence to access support and accommodations (AHEAD, 2020b; HEA, 2020).

These issues with access have led some HEIs to providing dyslexia screening services to students, as a pre-cursor to them privately pursuing full psycho-educational assessment. A 2015 research study reached out to 22 HEIs nationally in an attempt to summarise screening and assessment practices in the sector (Harkin, Doyle and Mc Guckin, 2015). A total of 14 HEIs responded to the research and all indicated that they were providing a dyslexia screening service, with an average of 22.8 screening assessments completed annually per institution. However, the assessment tools utilised and the training levels of the assessors differed across institutions, as did their willingness to allow students register for supports based solely on the screening assessments without requiring a full separate psycho-educational assessment; only 5 responding institutions allowed registration on the basis of the screening assessment (for exam accommodations only), while a further 2 allowed this on a case-by-case basis.

2.3.3 Disability Service model of support

Once students with disabilities have provided the relevant diagnostic documentation to the Disability Service to enable them to register for support, they complete what is referred to as a "needs assessment" (AHEAD, 2018a, par. 2). This assesses "support needs, curricular access supports such as assistive technology, the provision of sign interpreters and note takers along with extra focussed academic tutorials" (Shevlin *et al.* 2017, p. 162). As a result of this assessment, reasonable accommodations (such as permission to record lectures or additional time in exams) and individual supports (such as learning support) are granted to the student. The types of accommodations and supports granted vary from institution to institution as well as from student to student (dependent on their individual needs) but the common forms are as follows (AHEAD, 2021b):

- Reader service
- Use of audiotape to record lecture or tutorials
- Assistive technology
- Alternative format textbooks
- Copies of lecturer's notes and/or overheads
- Notetaker
- Time extension on assignments
- Study skills and learning support
- Extra time to complete each examination paper
- Invigilator / reader
- Use of a Computer and Assistive Technology in Exams
- Spelling and grammar allowance

The Disability Service also liaises with faculty and administrative staff in a confidential manner on a need-to-know basis regarding a student's support needs (AHEAD, 2020b). A Fund for Students with Disabilities (FSD) is provided by the HEA to individual institutions to cover the cost of putting in place student supports (HEA, 2020).

As highlighted by Griful-Freixenet *et al.* (2017, p. 1628), this type of HE disability support system, which they neatly summarise as "identify, label, tutor and accommodate", is set up in line with a medicalmodel understanding of disabilities. Disability issues are seen as residing within the student and adjustments are made to the individual student's learning path rather than the system as a whole. AHEAD (2019b, p. 5) highlights the lack of integration for students with disabilities inherent in this system of add-on provision: "full integration requires a whole college approach rather than the current model of relying heavily on disability support units and the Fund for Students with Disabilities to meet their needs."

2.3.4 Effective Disability Service supports

There are benefits to the Disability Service model of support for students with dyslexia who have the diagnostic documentation to allow them to access support. For example, in Soni's (2017) small-scale qualitative study amongst HE students with dyslexia in the UK, the students stressed the positive impact of the accommodations and supports they had been granted. The most commonly mentioned were extra time in exams, the Disability Support Allowance (not relevant to the Irish context), technical equipment, computer software and private spaces for study and exams. The participants stressed in general that they needed more time than their peers to be successful in their studies. In O'Byrne, Jagoe and Lawler's (2019) similar research in the Irish context, students with dyslexia stressed the value of exam accommodations but also emphasised that they would like more human resources for support with structuring and planning work. They too stressed the extra time it took for them to achieve as well as their peers. Stampoltzis et al.'s (2015b) small-scale study amongst students in one Greek university also indicated that individual support from lecturers/tutors was helpful as was the option for alternative assessments.

The three studies discussed above all focused on the experiences of students with dyslexia in just one individual HEI, using small-scale qualitative research designs, outlining what students reported as helpful. These provide some insights into how services can support students, but the studies were limited in their scope and fail to provide any outcome measures that provide hard evidence for the benefits on retention or academic outcomes of these different supportive strategies. MacCullagh (2014) conducted a more thorough review of the wider literature to investigate what strategies and resources promote more equitable access and improve outcomes for students in dyslexia. She lists (p. 103) several areas of focus that have been covered to different degrees in the literature:

- Specific resources and adjustments for students with dyslexia
- Programs to improve student uptake of current services
- Universal adjustments to teaching methods and learning formats
- Greater range of assessment options
- Staff and student awareness and training programs
- Improvements to university policies and procedures

A summary of MacCullagh's findings on each area of focus having reviewed the available literature are listed in Table 1 below. As is evident, despite much conjecture in the literature regarding what should

be done or what is likely to be effective, there is a lack of hard empirical evidence to prove the efficacy of these different approaches. Overall, MacCullagh (2014, p. 103) finds that "a great deal of work is needed in this area to create an evidence base for best practice."

Strategies / resources to	Summary of MacCullagh's findings			
improve outcomes				
Specific resources and	Lists examples of Disability Service accommodations and supports including			
adjustments for students	assistive technology, study skills training, peer support and mentoring.			
with dyslexia	Summarises that these strategies are likely to be helpful to students but			
	"insufficient well-designed evaluative research has been conducted to either			
	support or refute their effectiveness" (p. 104).			
Programmes to improve	Focuses on information sharing initiatives and self-advocacy programmes,			
student uptake of	highlighting that there is no published evaluative data regarding either measure.			
current services				
Universal adjustments to	Endorses the potential of such measures to reduce individual accommodations			
teaching methods and	for students with dyslexia and to improve their learning experience but also notes			
learning formats (e.g.	(p. 105) that "there are currently no evaluative research data available to support			
UDL)	such approaches."			
Greater range of	Backs the potential of such measures for all students but does not identify any			
assessment options	strong supporting evidence for improved outcomes and states that "further			
	research on this topic will be needed to ensure that any changes are well			
	designed and effectively implemented."			
Staff and student	Notes that although "awareness programs for university staff have been widely			
awareness and training	recommended in the published literature only one has been well described			
programs	(Wadlington et al., 2008), and only minimal evaluative data were provided to			
	support its efficacy."			
Improvements to	Notes that improvements in this space is suggested by various authors but			
university policies and	without much supporting evidence and so although "it is clear that improvements			
procedures	are required in this area, no guidelines are provided as to how such			
	improvements might be achieved."			

Table 1: Summary of MacCullagh's (2014) key findings regarding the literature on effective supports for students with dyslexia

Duggan and Byrne (2013), on behalf of the National Council for Special Education, have also compiled an extensive report into best practices for supporting students with disabilities in general (not dyslexia specifically) at HE with a focus on the Irish context. They focus on similar categories of support to MacCullagh (2014), referring to them as "interventions" (p. 76). Like MacCullagh, while they unearth numerous studies on the different intervention types, which broadly seem likely to be of benefit to students with disabilities, they fail to unearth comprehensive studies that reliably assess the impact of such measures on student outcomes. A summary of their findings on each area of focus are listed in Table 2 below.

Table 2: Summa	ary of Duggar	n and Byrne'	s (2013) key	/ findings	regarding	the	literature	on	effective
supports for stud	dents with dis	abilities (incl	uding but no	ot exclusiv	ely those w	vith a	lyslexia)		

Intervention	Summary of Duggan and Byrne's findings				
Reasonable	Mixed results on whether students with disabilities perceive their				
accommodations	accommodations as effective but more likely when they are based on their				
	personal needs rather than a disability category.				
Differentiated	"Appears widely available although evidence of its effectiveness is also somewhat				
assessment	ambiguous" (p. 79).				
Enabling programmes for	There is evidence indicating these can be effective, but most research has been				
students with disabilities	conducted amongst students with intellectual disabilities (a group not catered for				
	in the Irish 'Disability Service' provision).				
Universal Design	Has exciting potential but lacks research to support its efficacy in terms of				
	tangible outcomes such as retention and graduation rates.				
The use of ICT	There are numerous examples of how the use of ICT might facilitate access to				
	learning materials for students with disabilities but high levels of cooperation				
	from academics is necessary and these solutions may not work at all times for				
	different students with disabilities.				
Other supports: assistive	"Few studies of assistive technologies, funding, personal supports or physical				
technology, funding,	access were found in the literature, with personal supports receiving surprisingly				
personal supports or	little attention" (p. 90).				
physical access					
Staff training	Studies indicate that students report lack of staff awareness as a significant issue,				
	but there is a lack of evidence cited supporting the efficacy of formal training				
	measures.				

Three key points emerge from this brief overview of the literature regarding best practices to support students with disabilities (in particular dyslexia). Firstly, it is likely that the myriad of support practices commonly utilised across HEIs – such as reasonable accommodations, assistive technology, personal support, staff training, universal design, assistive technology – are broadly beneficial to students. However, secondly, there is a lack of hard evidence indicating the difference they each make in turns

of academic, retention and graduation outcomes for students with disabilities (and, in particular, students with dyslexia). Finally, thirdly, studies amongst students with dyslexia also tend to be small scale qualitative pieces, often based in just one institution, that can lack generalisable findings and typically lack the voice of Disability Service staff members.

Duggan and Byrne (2013, p. 4) neatly summarise the current situation:

Overall... while practices supporting adults with disabilities in higher and further education are extensive and diverse, there is no one single solution to the challenges arising and careful monitoring of practice is required to ensure that innovations and measures are achieving their objectives and are not systematically excluding categories of disabilities.

2.3.5 Disability Service staff

Disability Services are staffed by administrative personnel in HEIs. Despite being classified as administrators, Disability Service staff occupy the type of modern HEI cross-boundary roles with complex responsibilities "that are not necessarily recognised within existing organisational frameworks" (Whitchurch, 2013, p. 19). Whitchurch (2008, 2012) argues that these professionals are neither best described as administrators or academics; instead, they occupy a 'third space' in modern HEIs. Although Disability Service staff take on complex third space roles, they can be hired under whatever job description an individual HEI decides, with no sector-wide standards on terms, conditions or specialist gualification standards. In this context of opaque professional terms and conditions, in combination with the lack of qualification requirements, it is possible that the staff in Disability Services may not have any relevant professional training or an in-depth understanding of disability issues despite the complex nature of the work tasks associated with their roles. Many new staff members in the sector do complete a short course on supporting students with disabilities provided by AHEAD (2021a), but, while this is no doubt valuable, it is an unaccredited online course of 18-22 hours' duration. As such, it pales in comparison to the level of traditional professional training courses in education and disability-related disciplines provided by accredited HEIs, which range from degree level (e.g. primary teaching; Mary Immaculate College, 2021) to doctorate level (e.g. educational psychology; University College Dublin, 2021).

Despite the lack of coherence across the sector, Disability Service staff typically fall into one of three broad occupational sub-groups: Disability Officers; Assistive Technology Officers; or Learning Support Officers. Disability Officers undertake needs assessments and liaise with faculty and administrative offices regarding a student's needs. Assistive Technology Officers provide training to students in different learning technologies. Learning Support Officers provide individualised support to students to manage their studies. Personnel with professional qualifications, namely Occupational Therapists (e.g. Dublin City University, 2020b) and Psychologists (e.g. Technological University Dublin, 2020), sometimes occupy these learning support positions.

2.3.6 Sub-section summary

The number of students with disabilities in Irish HEIs has increased dramatically over the last twenty years. By far the largest disability category is students with specific learning difficulties, the vast majority of whom are likely to be registered with dyslexia. Students with disabilities (including dyslexia) can access supports via the DARE scheme, which has been proven to be weighted towards students from affluent backgrounds, or via self-disclosure, which international research shows is extremely low for students with disabilities.

Support for students with disabilities including dyslexia is provided by Disability Services, manned by a small, emergent occupational sub-group of third space professionals who hold complex responsibilities but may not necessarily have professional disability/special education qualifications. The Disability Service supports provide by these staff members are coordinated in a medical model system dependent upon psycho-medical diagnosis. This model of support bears some advantages to those who can avail of it but operates exclusionary parameters around which students can avail of support for dyslexic-type difficulties.

2.4 Move to inclusive supports and practices for students with dyslexia

The final theme of this review relates to the evidence of a move towards inclusive supports and practices for students with dyslexia in the HE sector. The following topics will be discussed in turn: Mainstream learning supports; Freely accessible assistive technology; and Universal Design for Learning.

2.4.1 Mainstream learning supports

In recent years, HEIs have begun to provide mainstream learning support that is accessible to *all* students, not just those with registered disabilities. Most HEIs in the country now provide some version of a Writing Centre and a Maths Learning Centre open to all students (e.g. University College Dublin, 2020b; University of Limerick, 2020). Institutional libraries also frequently provide additional

support with research and referencing (Institute of Art, Design and Technology, 2021; University of Limerick, 2021b). Some institutions, in addition to providing research, writing and maths support, also provide a mainstream learning development service that addresses areas such as time management, organisation skills, presentation skills, study skills and exam strategies (e.g. University College Cork, 2020).

Evidence on the ground indicates that Disability Services are increasingly pointing students towards these mainstream supports in parallel to their own disability-specific supports. In the University of Limerick, for example, the Disability Service's student handbook points students towards the institution's Writing Centre, Maths Learning Centre and ICT Learning Centre amongst others to assist their learning development (University of Limerick, 2021a). And in Trinity College Dublin, the Disability Service student resources webpage signposts the institution's mainstream Student Learning Development unit (Trinity College Dublin, 2021a).

An intriguing recent study by Newman et al. (2020) in the USA compared the benefit of mainstream supports (such as Writing Centres and Maths Learning Centres) versus specialist disability supports to undergraduate students with disabilities. Newman and colleagues tracked 2,330 students, who had been identified as having a disability in secondary school, through their college years. These students were tracked regardless of whether they had chosen to disclose their disability condition to their new college or not. Newman et al. found, unsurprisingly, that "students with disabilities who had accessed universally available and/or disability-related supports were significantly more likely to persist in their 2 or 4-year college programs" (p. 1). However, they also found, very surprisingly, that "retention rates were higher for those who had accessed universally available supports only, such as writing and math centres, which do not require disclosure of a disability" (p. 1). While this result must be interpreted with caution, as these mainstream supports may attract students with less severe individual needs, or those who have the existing skills and knowledge to manage their own learning journey, it does indicate that mainstream supports may successfully meet the needs of many students with disabilities. As stressed by Newman and colleagues, this form of support may be particularly appealing to the large number of students who are likely never to disclose, including those with invisible disabilities such as dyslexia.

Another qualitative study in the U.S. context provided some further insight into the appeal of these mainstream supports versus Disability Service supports for students with disabilities. Using an innovative methodological approach, Hong (2015) worked with 16 students with disabilities over a 10-week period during which they completed reflective journals to capture their experiences of studying at HE. One of the key findings that emerged was that the students "conveyed that they preferred to

go to the tutoring centres (writing, math, science) to get help rather than be identified as someone who has a disability and needs accommodations" (p. 224). This finding reinforces the impact of stigma on the HE experiences of students with disabilities. Interestingly, the one drawback noted by the students in regards to the mainstream services was that they had a limited number of hours they could attend the services per week, with Hong consequently calling for consideration for increased allowances of mainstream support provision for students with disabilities.

2.4.2 Freely accessible assistive technology

As well as being able to access mainstream learning supports, all students can increasingly access high quality assistive technologies which in the past would only have been available to students registered with Disability Services. This widespread availability of assistive technology is of particular relevance to students with dyslexia, as "technology can redefine traditional concepts of learning accommodation by offering people with reading difficulties an easy access to written/printed material" (Lindeblad et al., 2017, p. 713). Disability Services in Ireland provide an array of technologies to support reading access. The most common packages are screen readers such as Read and Write Gold (Institute of Art, Design and Technology, 2020) and grammar and spell checking software such as Grammarly (University College Dublin, 2020a). Many of these technologies have paid premium versions but also provide free basic packages. While in the past, assistive technologies would have only been made available to some students registered with Disability Services, now many HEIs are actively buying site licences for key software packages to provide access to them for all students in the institution (e.g. Dublin City University, 2020a) or promoting the basic free packages to all students (Institute of Art, Design and Technology, 2020). In addition, there is now a plethora of low cost or free apps available to anyone with a mobile phone to assist with reading, writing, time management, document storage and other relevant areas (University of Edinburgh, 2020). Students with dyslexia can therefore now access essential technology supports without ever having to register with a Disability Service.

2.4.3 Universal Design for Learning

In addition to the introduction of mainstream learning supports and assistive technology, there is an increased sector-wide focus on introducing principles of Universal Design (UD) into the HE curriculum. The concept of Universal Design originally emerged in the 1970s in relation to the built environment, with a focus on designing buildings from the beginning so that they could be accessible to all rather that retrofitting them for accessibility after construction (Chandler, Zaloudek and Carlson, 2017; Scott and McGuire, 2017). Over time, however, the key idea of designing for accessibility from the beginning

entered other areas of design and eventually the ideas were applied to education (Chandler, Zaloudek and Carlson, 2017). As outlined by Scott and Maguire (2017), different educational frameworks founded on UD principles emerged, notably 'Universal Design for Learning', 'Universal Design for Instruction', 'Universal Design in Education' and 'Universal Instructional Design'. Of these various approaches, Universal Design for Learning, pioneered by the Centre for Applied Science Technology (CAST), has been the framework endorsed in the Irish context by the HEA (2015) and also by the Disability Advisors Working Group (DAWN) in conjunction with AHEAD (2017, 2018b, 2019a) as well as multiple different individual HEIs (e.g. University College Cork, 2018; Dublin City University, 2020d; University College Dublin, 2020c). Therefore, it is the focus of this review, and the following definition of UDL as offered by CAST (2022, para. 1) will be utilised in the current study:

Universal Design for Learning (UDL) is a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn.

Hall et al. (2015, p. 72) expands on this definition further:

Universal Design for Learning (UDL) is a framework for instructional design, based on neuroscience and interpreted from an educational perspective, which is flexible and supportive for all learners, including those with learning disabilities, so that instructional goals, assessments, methods, and materials are usable and accessible by all.

The UDL framework, with its focus on removing barriers to learning for all students from the very beginning, is "currently seen as a means to move from the individual model to the social model of disability" (Griful-Freixenet *et al.*, 2017, p. 1629). The research base for the framework is founded on a marriage of modern neuroscientific research and traditional psycho-educational theory which together indicate "that there are three major brain divisions and correlating neurological processes associated with learning: recognizing information, using strategies to organize and express information, and affective networks for engaging with information" (Chandler *et al.* 2017, p. 153). The Centre for Applied Special Technology (2018) provides a simple shorthand to describe the role of each of these three learning networks: affective networks are referred to as *the WHY of learning*; recognition networks are *the WHAT of learning*; and strategic networks are *the HOW of learning*. The UDL framework specifies three broad non-hierarchical principles of curriculum development in line with these learning networks (Hanesworth, Bracken and Elkington, 2019); *provide multiple means of engagement*; *provide multiple means of representation*; and *provide multiple means of action and expression* (see Table 3; adapted from CAST, 2018). Underneath the umbrella of these three broad

principles are nine guidelines and underneath these guidelines in turn are thirty-one checkpoints that provide specific guidance on how to implement the UDL framework (CAST, 2018).

Networks	Short explanation	Associated UDL principle	Guidelines	
Affective networks	The WHY of Pro learning me en	Provide multiple means of engagement	7: Provide options for recruiting interest8: Provide options for sustaining effort and persistence	
			9: Provide options for self-regulation	
Recognition	The WHAT of	Provide multiple	1: Provide options for perception	
networks	learning	arningmeans of2: Provide options for language & symrepresentation3: Provide options for comprehension		
Strategic networks	The HOW of learning	Provide multiple means of action & expression	4: Provide options for physical action5: Provide options for expression and communication6: Provide options for executive functions	

Table 3: The UDL principles

As noted by Dalton (2017, p. 20), UDL is a "front-loaded model for curriculum design" whereby "curriculum variations to address learning through recognition, strategy, and affect are built into the design of the lesson from the start." Dalton highlights how this is a key difference to the traditional approach of providing add-on accommodations for students with special educational needs/disabilities. Previous research amongst HE students with disabilities has indeed supported the benefit of curriculum designed in line with UDL principles for this cohort. Griful-Freixenet *et al.* (2017, p. 1634) interviewed 40 students with disabilities to explore "the most effective course they had during higher education, the faculty teaching methods and strategies that positively affected their learning, and the barriers they perceived in learning and accommodations". The results found evidence for the benefit of teaching and learning strategies that aligned with all three UDL principles. Interestingly, however, some guidelines underneath these principles were not relevant for all students, with guidelines 1 (perception), 2 (language & symbols) and 4 (physical action) only evident for some disability cohorts. The current literature review did not identify any previous studies that focused on the most applicable UDL guidelines and principles for students with dyslexia in particular, indicating that further research is necessary in this regard.

Universal Design for Learning has been endorsed by both policy makers and professional interest groups as a means of meeting the diverse learning needs of students with disabilities. In terms of national policy, UDL is referenced in the current National Access Plan (HEA, 2015, p. 21) underneath

one of its core fundamental principles of mainstreaming access policies into the everyday life of HEIs. The reference to UDL is also maintained in the 2018 progress review of the National Access Plan (HEA, 2018, p. 28, 38, 47) with further intentions stated to communicate "clear information on mainstreaming in practice and universal design... to higher education institutions" (p. 28).

In terms of professional interest groups, AHEAD, with input from the Disability Advisors Working Network (DAWN; a national working group for Disability Officers), has produced a series of strategy documents proposing a new future for Disability Services in Ireland advocating a move towards UDL as a means of meeting the needs of all students, including those with disabilities (AHEAD, 2017, 2018b, 2019a). AHEAD (2017, p. 8) argues that, against the backdrop of ever-increasing numbers of students with disabilities, the current "add-on, retrofit" model of disability support is financially unsustainable and is also "obsolete and ethically unsound". Instead, AHEAD (2017, p. 7) promotes UDL as the solution to meeting the needs of all learners, including those with disabilities/specific learning difficulties:

AHEAD, together with DAWN, strongly advocate Universal Design for Learning (UDL) in higher education as a model of inclusive practice that can cater for a diverse student base including students from socio-economically disadvantaged backgrounds, mature students, members of the travelling community, international students and students with disabilities, including students with mental health difficulties and specific learning difficulties.

AHEAD and DAWN propose a new model of inclusive disability practice based on the UDL framework. As can be seen in Figure 3 (adapted from AHEAD, 2017, p. 14) it proposes four levels of responsibility: at a national level; an institutional level; a course level; and a Disability Service level. It is important to note that UDL "does not negate the need for add-on support entirely, as a learner may (in some instances) require grouped or individualised supports/reasonable accommodations" (Quirke and McGuckin, 2019, p. 7). However, it is evident that within AHEAD's proposed model the role of the Disability Service would be re-calibrated to being responsible for providing reasonable accommodations only to students with "*high needs*" (to use AHEAD's own terminology; AHEAD, 2017, p. 14). This is a repeated theme throughout the AHEAD series of documents (AHEAD, 2017, 2018b, 2019a). And it is implied that the needs of students who don't have 'high needs' could be met just through general UDL innovations at a course level, which are vaguely specified in the AHEAD/DAWN proposal. The AHEAD/DAWN proposal doesn't specify which disability cohorts fall into the 'high need' category but it is likely that students with dyslexia (or at least the vast majority of this cohort) would not, meaning that they might no longer have access to individualised Disability Service supports.

55



Figure 3: The AHEAD proposed model of inclusive practice in higher education in Ireland

Despite the interest in UDL there are some issues with its research base. Although there is evidence for the benefits of each of the three separate principles contained in the framework (Kennette and Wilson, 2019), Capp (2017) points out that many studies focus just on the representation principle. Furthermore, as highlighted by Chandler, Zaloudek and Carson (2017, p. 166):

Although there are copious studies on very specific design techniques, UDL is the constellation of design techniques intentionally selected to maximize learning for all students... Different research approaches will be required to investigate how intentional UDL designs differ from selecting many of the same evidence-based design techniques but designing outside of the UDL framework.

Al-Azawei, Serenelli, and Lundqvist (2016) performed a content analysis of UDL studies that produced empirical results published between 2012 and 2015 to address this issue of whether research studies that claim to be assessing UDL have actually closely adhered to the framework. Only twelve studies passed through their four-point exclusion criteria ("all published papers before 2012; all papers without empirical findings; papers that adopted other UD models; papers that presented/explained the UDL model or compared it with other UD frameworks" [p.44]), from an initial pool of 55, demonstrating the lack of objective empirical research into the framework. Of those twelve *not one* specifically stated which checkpoints in the framework had been applied in the research design. Al-Azawei and colleagues also found that the majority of empirical studies into UDL were completed in the USA and that there was a "scarcity of empirical findings to support the model in diverse regions and cultures". Furthermore, as noted by Dean *et al.* (2017), even when UDL research does examine student outcomes based on the whole framework it tends to look at affective outcomes rather than objective outcomes such as exam results.

These gaps in the UDL research base indicate that UDL has a way to go to demonstrate efficacy in improving tangible learning outcomes for diverse students across different cultural contexts and education systems. In addition, there are also practical considerations regarding UDL that may impact on the viability of its roll-out in the HE sector. One significant consideration relates to how prepared HE academic staff are to revolutionise their teaching and learning practices in the necessary manner to implement the framework. Fichten *et al.* (2016, p. 30) highlight that although there are numerous tools available to guide lecturers in the implementation of universal design principles, they are "yet to be embraced by large numbers of faculty in colleges and universities." Furthermore, as noted by Griful-Freixenet *et al.* (2017), the traditional add-on accommodations model of disability support has meant that academics simply have not been required, up until now, to gradually develop their general teaching skills to meet the needs of students with disabilities. There is a consequent risk that some academics will not buy into the need to adapt their approach for students with disabilities while others will lack confidence in their ability to tailor their teaching accordingly. Even if they do embrace the framework, whether academics will actually put the time and effort into implementing the framework remains unclear, given the high demands in this regard (Al-Azawei, Serenelli and Lundqvist, 2016).

A final practical consideration regarding the roll-out of UDL relates to which department in an individual HEI is responsible for it. Both Disability Services and Teaching and Learning units have been at the forefront of promoting UDL thus far in the sector (Higher Education Authority, 2018; Dublin City University, 2020d). However, Disability Services are part of student services with a *student support* rather than a *staff development* remit, and while they may bring UDL enthusiasm to the table, their staff are not academics and few across the sector are likely to have lecturing experience or staff development experience. On the other hand, Teaching and Learning units bear responsibility for staff development but may lack disability expertise. One option to overcome these knowledge gaps is to establish cross-unit collaborations between Disability Services and Teaching and Learning units. As documented by Behling and Linder (2017), there have been efforts at cross-unit UDL collaborations of this nature in the USA that have experienced some success. Behling and Linder's research also found, however, that significant challenges to collaboration exist in the shape of time and logistics involved in working together, lack of interest from faculty, competing priorities of the units involved and lack of funding to support the collaboration. In the Irish context, there are local pockets of collaborative practice evident, typically led by individual Disability Service staff who happen to have a background

in academia (e.g. University College Cork, 2018; University College Dublin, 2020c), but this is not the case across the entire sector and further research is required into how these collaborations are working. It is therefore evident that the UDL role of Disability Service staff members is still in development.

2.3.4 Sub-section summary

In recent years there has been evidence across the HE sector of an increased range of mainstream support services and assistive technologies accessible to all students (including those with dyslexia), as well as evidence of the endorsement and gradual adoption of the UDL framework. This indicates the growth of more social model-oriented provisions across the sector to extend the formal Disability Service model of provision still in existence. Amidst all this, the role of Disability Service staff in delivering inclusive supports and promoting UDL is still in development.

2.5 Summary and analysis through a theoretical lens

To draw this literature review to a close, the key findings from the review alongside those from the policy discussion outlined in Chapter 1 can be summarised and analysed through the lens of a theoretical framework; the bioecological framework of Urie Bronfenbrenner (Bronfenbrenner, 1977; Bronfenbrenner and Morris, 2006) (1977). The bioecological framework has previously been utilised in SEN/inclusion research as it is "a theoretically based structure capable of accommodating both scientific and social policy issues" (Lambert and Frederickson, 2015, p. 115) that provides "a lens to understand the topic in hand in a systematic and structured way" (King and Travers, 2017, p. 155).

The bioecological model, together with its corresponding research designs, is an evolving theoretical system for the scientific study of human development over time... development is defined as the phenomenon of continuity and change in the biopsychological characteristics of human beings, both as individuals and as groups. (Bronfenbrenner and Morris, 2006, p. 793).

The bioecological framework has been through several phases of development (Rosa and Tudge, 2013) and different iterations have been utilised by different researchers to explore different issues such as inclusion, disability, and social justice (Odom *et al.*, 2004; Doyle, 2015; King and Travers, 2017). One approach of particular relevance to the current study was that taken by Odom *et al.* (2004), which utilised the framework as aligned with its second broad iteration (Rosa and Tudge, 2013) to review the research regarding a particular cohort of students (children with disabilities) at a particular time in their educational journey (preschool) in a particular setting (mainstream education programmes).

The current study also focused on a particular cohort of students (individuals with dyslexia) at a particular time in their educational journey (adult education) in a particular setting (HE), so the approach taken by Odom and colleagues is highly relevant. The bioecological framework as utilised by Odom *et al.* (2004) is represented in Figure 4 below.



Figure 4: The bioecological framework

As is evident, the bioecological framework identifies "nested systems" that individuals develop within (Lambert and Frederickson, 2015, p. 115). The nested systems are as follows:

- **Biosystem:** the characteristics of the individual and their disability condition (Odom *et al.*, 2004).
- **Microsystem:** "the complex of relations between the developing person and the environment in an immediate setting containing that person" (Bronfenbrenner, 1977, p. 514).
- **Mesosystem:** "compromises the interrelations among major settings containing the developing person at a particular point in his or her life" (Bronfenbrenner, 1977, p. 515).
- **Exosystem:** "an extension of the mesosystem embracing other specific social structures, both formal and informal, that do not themselves contain the developing person but impinge upon or encompass the immediate settings in which that person is found, and thereby influence, delimit, or even determine what is going on there" (Bronfenbrenner, 1977, p. 515).

- **Macrosystem:** "general policies, laws and ideologies of cultural and social structures, such as economic conditions and cultural values" (King and Travers, 2017, p. 156).
- **Chronosystem:** "socio-historical life events" (Doyle, 2015, p. 56) that "incorporates aspects of the other... levels changing over time" (King and Travers, 2017, p. 156).

The key findings unearthed in the current study's literature reviewed above and in the policy context discussed in Chapter 1 can also be summarised and represented through the bioecological framework, following the approach taken by Odom *et al.* (2004). This summary is presented in Table 4 below.

Table 4: A summary of the literature findings through the lens of the bioecological framework

Biosystem

Dyslexia: Dyslexia impacts individuals differently (Łockiewicz, Bogdanowicz and Bogdanowicz, 2014) and identification is fraught with difficulty (Elliott and Grigorenko, 2014). The medical model has traditionally dominated dyslexia conceptualisations but this is shifting towards more biopsychosocial and neurodiverse conceptualisations (MacDonald, 2019), the latter particularly amongst students (Stampoltzis *et al.*, 2015b).

Microsystem

The HE 'classroom' context: Teaching practices that reflect UDL guidelines are beneficial for students with disabilities, but not all guidelines are applicable for all disability cohorts (Griful-Freixenet *et al.*, 2017).

Disability Service: Provides beneficial exam accommodations, assistive technology and individual supports for students with dyslexia (Soni, 2017; O'Byrne, Jagoe and Lawler, 2019) but non-disclosure a significant factor (De Cesarei, 2015; Newman and Madaus, 2015) as is lack of access to those without a diagnosis. More services are now providing supports open to all, spanning the space between Disability and mainstream support.

Mainstream Services: Students with disabilities prefer to access mainstream supports (Hong, 2015).

Mesosystem

Disability vs mainstream supports: Students with disabilities who access mainstream rather than disability services experience better outcomes (Newman *et al.*, 2020). The formal and informal connections and dialogue between mainstream services and disability services remains unclear.

Exosystem

Lecturing staff and UDL: HE lecturers slow to implement UDL despite available tools (Fichten *et al.*, 2016), possibly due to high time demands (Al-Azawei, Serenelli and Lundqvist, 2016) and lack of need to date due to existing reasonable accommodations model (Griful-Freixenet *et al.*, 2017).

UDL implementation: Can fall between Disability Service and Teaching and Learning units – joint cross-institution projects best suited to implementation (Behling and Linder, 2017).

Macrosystem

Legislation: Educational institutions are obliged to meet the needs of students with disabilities (Education Act, 1998; Equal Status Act, 2000; Education for Persons with Special Educational Needs Act, 2004; Equality Act, 2004; Disability Act, 2005) and the ratification of the UNCRPD (United Nations, 2006) in 2018 necessitates a move towards a more social model-oriented approach to supporting people with disabilities.

Target setting: Neo-liberal audit culture has become rife across HE (Cruickshank, 2016; Keane, 2016) leading to disability policy focused largely on numeric targets to indicate success, which incentivises medical model provisions for pre-identified students with disabilities (Higher Education Authority, 2015, 2018, 2021a).

Stigma: Disability stigma is one potential major factor underpinning non-disclosure (Eccles et al., 2018).

Chronosystem

Age of diagnosis: HE students with dyslexia who receive their diagnosis earlier in life at primary level report more positive educational experiences than those who receive it at secondary or HE level (Soni, 2017).

Transition to HE: DARE scheme over-represented by students from affluent backgrounds, likely due to ability to afford and source diagnosis (Byrne *et al.*, 2014; Nic Fhlannchadha, 2018).

The use of the bioecological framework helps illustrate the interactions and impact of various factors on the experience of students with dyslexia. Two key points tentatively emerge from this analysis of this information.

Firstly, the arguably negative influence of neo-liberal education policy at the macro level can be perceived at other levels in the system. At the macrosystem level, target setting as part of government education policy feeds into disability policy which concentrates on identifying hard numbers of students with disability conditions to measure success. This in turn limits the capacities of Disability Services to move beyond medical model provisions at the microsystem level, meaning that all students must present with a diagnosis to avail of supports. At the biosystem level this means that, despite the difficulties with dyslexia diagnostic procedures, students must undergo formal dyslexia assessment to officially document their pattern of personal learning difficulties to avail of Disability Service support. This in turn reinforces medical model conceptualisations of dyslexia. At the chronosystem level this also means that the crucial transition point to HE is impacted by the DARE scheme and its insistence on formal diagnosis for access.

However, secondly, the simultaneous positive impact of disability legislation and associated conceptual thinking at the macro level can also be perceived at other levels in the system. Disability legislation in the early 2000s prompted the rapid expansion of Disability Services at the microsystem level in the first place, albeit along strict medical model terms. Moreover, the ratification of the UNCRPD in 2018 is now placing more pressure on the HEA and HEIs to adopt more social model approaches to provision, which is evident at the exosystem level with institutions pushing forward with UDL implementation. Furthermore, mainstream services are now occupying some of the space previously occupied by Disability Services, with students likely moving between both support options (although connections between these microsystem supports at the mesosystem level remains unclear).

This bioecological analysis serves to remind us that macro-level influences can have potentially positive and negative impacts which filter down the system and influence in turn the ecological hinterland that students with dyslexia function within. This framework underpins the study's research questions (as discussed in Section 2.6 below) as well as its employment of a mixed methods research design (as discussed in Section 3.2.2). It will be returned to again in Chapter 6 to help analyse the key findings that emerged from the study.

62

2.6 Emergent research questions

As is clear from the review of the literature presented above, the provision of supports for students with dyslexia in HEIs remains formally coordinated in a Disability Service provision, in line with the traditional medical model of disability and its associated "interpretation of inclusion based on a special education framework and knowledge" (Strnadová, Hájková and Květoňová, 2015, p. 1081). However, this system is now being extended with mainstream services and a focus on introducing UDL. These innovations are in line with the social model of disability and its associated view of "inclusion as meeting the needs of all learners, irrespective of their needs" (Strnadová, Hájková and Květoňová, 2015, p. 1081). This places a challenge to the traditional role held by Disability Service staff in supporting students with dyslexia, at a time when understandings of dyslexia as a disability construct are also rapidly evolving from a traditional medical model understanding towards, it is necessary to identify what aspects, if any, of the current Disability Service provision should be retained by Disability Services in their daily work supporting students with dyslexia and how these can be further extended with practices and supports to reduce barriers to learning for all students, including those with dyslexia, in a potentially more biopsychosocial approach to service provision.

The following research question therefore emerges: What is the role of Disability Service staff in supporting students with dyslexia in Irish higher education institutions?

The research sub-questions are as follows:

- 1. How do Disability Service staff and students understand and characterise dyslexia?
- 2. How are current disability support provisions meeting the needs of students with dyslexia?
- 3. How do Disability Service staff and students view whole-campus inclusive supports and teaching and learning practices for students with dyslexia?

This research is guided by the bioecological framework discussed above, in its efforts to try and identify factors from the biosystem right up to the chronosystem that may impact students with dyslexia at HE and the role of Disability Service staff in supporting them. It if further guided by the conceptual model displayed in Figure 5. This framework illustrates the primary areas of concern in this research project, namely Theme 1: Understandings of dyslexia, Theme 2: Issues with current model of provision, and Theme 3: Inclusive supports and teaching (in the grey, yellow and green boxes respectively) that align with the study's three research sub-questions. Overall, these research strands are being utilised to examine how current Disability Service supports are being extended to remove

barriers to learning for students with dyslexia and how this relates to the representations of inclusion prominent at HE, as illustrated in the blue ovals at the top and bottom of the graphic.



Figure 5: Conceptual framework

Chapter 3: Methodology

3.1 Introduction

An explanatory sequential mixed method research design was utilised to explore the primary research question 'What is the role of Disability Service staff in supporting students with dyslexia in Irish higher education institutions?'

The sequential research phases employed in this design both addressed the same three research subquestions:

- 1. How do Disability Service staff and students understand and characterise dyslexia?
- 2. How are current disability support provisions meeting the needs of students with dyslexia?
- 3. How do Disability Service staff and students view whole-campus inclusive supports and teaching and learning practices for students with dyslexia?

This chapter will firstly outline the overall mixed methods design employed. It will then provide further detail on each of the study's two research phases, specifying the philosophical assumptions adopted in each as well as the research methods employed and data analysis techniques utilised. Finally, the ethical considerations taken on board in the research study will be outlined as will the impact of Covid-19 on the study's completion.

3.2 Mixed methods design

This research study utilised a mixed method research (MMR) design, an approach which has risen in popularity in social science research in recent years (Queirós, Faria and Almeida, 2017). Its rise has been predicated on its rejection of the traditional quantitative/qualitative research divide and the associated "ardent dispute" between purists from both of these camps as to how social science research should be conducted (Johnson and Onwuegbuzie, 2004, p. 14). Within this dispute "both sets of purists view their paradigms as the ideal for research, and, implicitly if not explicitly, they advocate the *incompatibility thesis* (Howe, 1988), which posits that qualitative and quantitative research paradigms, including their associated methods, cannot and should not be mixed" (Johnson and Onwuegbuzie, 2004, p. 14). Mixed methods research has evolved in opposition to these traditional purist assumptions, instead arguing that due social phenomena being "extraordinarily complex... better understanding of the multifaceted character of educational and other social phenomena can be obtained from the use of multiple approaches and ways of knowing" (Greene, 2007, p. 20). There

are multiple definitions of what mixed methods research is and what it aims to do. Johnson, Onwuegbuzie and Turner (2007, p. 123) have reviewed nineteen such definitions and produced their own as a result of this thorough research:

Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the purpose of breadth and depth of understanding and corroboration.

This definition is utilised in the current study due to the comprehensive process that Johnson and colleagues undertook to reach this wording, having reviewed multiple MMR definitions and combined their common characteristics to reach this one core, composite definition. It is also employed due to its simple pragmatic focus on the purpose of MMR - "breadth and depth of understanding and corroboration" – which was the guiding principle behind the current study's choice of research design.

There are many variations of project design within MMR and this research study adopted an explanatory sequential mixed method design, represented in Figure 6 (adapted from Creswell and Plano Clark, 2011, p. 69). Firstly, a quantitative research phase was conducted (Phase 1), consisting of an online self-administered questionnaire circulated to a total population sample of Disability Service staff in Irish HEIs investigating their role in supporting students with dyslexia. The results of Phase 1 were analysed and utilised to guide Phase 2, a qualitative multiple case study of three Disability Services in Irish HEIs, which sought to further investigate and explain the results found in Phase 1. Both research phases addressed the same 3 research sub-questions as outlined above. The results of the quantitative and qualitative phases were not purposefully merged but rather were interpreted alongside each other in order to address the project's research questions (Creswell and Plano Clark, 2011).



Figure 6: The explanatory sequential mixed methods design

3.2.1 Mixed method strand interaction, priority, timing and mixing

The design employed aimed to address key decisions regarding the *level of interaction, priority, timing* and *mixing* of the quantitative and qualitative research strands as recommended by Creswell and Plano-Clark when conducting an explanatory sequential MMR study (2011).

In terms of *level of interaction*, the quantitative and qualitative strands interacted at three points: they both tackled the same research questions; the results of the quantitative strand influenced the focus of the qualitative strand; and the results of each strand were brought together during the overall interpretation phase at the end of the study.

In terms of *priority*, the quantitative strand held dominant priority, as is recommended for an explanatory sequential design (Creswell and Plano Clark, 2011).

In terms of *timing*, the quantitative strand was implemented first followed by the qualitative strand in two research phases.

In terms of *mixing*, the quantitative and qualitative strands were mixed at two points in the research process: during the data collection stage and the interpretation stage. During the data collection stage, the results of the online questionnaire were analysed quantitatively and influenced the choice and wording of the questions that featured in the qualitative strand. The qualitative strand only took place after this analysis process had been completed. During the interpretation phase the results of both strands were then interpreted alongside each other in relation to the key research sub-questions and the study's overall conceptual framework. The quantitative and qualitative strands were therefore intertwined throughout, with the qualitative strand serving to follow up and further explore the findings of the quantitative strand, and both sets of findings being interpreted alongside each other in order to answer the same three research sub-questions.

3.2.2 Justification for mixed methods approach

The project utilised a mixed methods design for a number of key reasons as outlined in Table 5 (based on Bryman, 2006, p. 108): triangulation; offset; completeness; credibility; context; illustration; and diversity of views.

It is further important to note that the mixed methods approach aligned with the bioecological framework that underpinned the study's research questions. The mixing of both quantitative and qualitative data collection strands facilitated the breadth and depth of information gathering

necessary to analyse students' experiences of dyslexia, HE and Disability Service supports from a bioecological, multi-layered perspective.

Reason	Application to current research study				
Triangulation	The quantitative questionnaire results and qualitative case study results could be triangulated to corroborate the research findings.				
Offset	The weaknesses inherent in each of the methods could be offset against each other.				
Completeness	By gathering two forms of data and interpreting them together this study could provide a more complete account of the research problem.				
Credibility	The credibility of the research findings could be raised by using mixed methods of inquiry.				
Context	The qualitative data from the case studies could provide a contextual understanding of the broad, generalisable findings provided by the self-administered questionnaire.				
Illustration	The qualitative findings from the case studies could help illustrate and flesh-out the quantitative findings from the broad self-administered questionnaire.				
Diversity of views	The research could capture both the researcher's views on the subject (through the construction of the closed-question questionnaire) as well as the views of the participants (through the data gathered via the case studies).				

Table 5: Reasons for mixing methods in the current research study

3.2.3 Mixed method research worldviews

The core set of philosophical assumptions that guides a researcher's actions and choice of design/methodology is frequently referred to as a research 'worldview' (Creswell, 2003; Sefotho, 2015). This research 'worldview' includes an ontological stance regarding the structure of reality, an epistemological stance regarding the nature of knowledge and an axiological stance regarding the role of values (Crotty, 2004). Two contrasting worldviews underpinned the research approaches adopted in Phase 1 and Phase 2 of this project, as recommended when conducting MMR utilising the explanatory sequential design (Creswell and Plano Clark, 2011): post positivism (Phase 1) and constructivist interpretivism (Phase 2). The use of these worldviews shall be outlined in turn under each research phase below.

3.3 Research Phase 1

3.3.1 Research worldview

Research Phase 1 adopted a post positivist worldview. Positivism underpins quantitative, empirical approaches to conducting research and has, traditionally, been the dominant research worldview employed in advancing scientific knowledge (Robson and McCartan, 2016). It is most commonly associated with quantitative research methods (Corbetta, 2003). Positivism is premised on the epistemological stance of objectivism, which posits that reality exists outside of an individual's consciousness (Sefotho, 2015). Ontologically, positivism adopts a "fixed and knowable view of the world which can be discovered and explained and exists independently of our experience of it" (Wisker, 2009, p. xv). In terms of axiology, positivism strives to achieve unbiased research; checks and balances are applied to eliminate the risk of bias (Creswell and Plano Clark, 2011). In more recent years post positivism has emerged as what Crotty (2004, p. 29) terms an "attenuated" version of positivism that "talks of probability rather than certainty" and " a certain level of objectivity rather than absolute objectivity... [that] seeks to approximate the truth rather than grasp it in its totality". Research Phase 1 adopted this post positivist approach through its pursuit of quantitative data amenable to statistical analysis in order to identify objective, non-biased findings within a probabilistic margin of error.

3.3.2 Research method

An online self-administered questionnaire (Appendix B) was circulated to Disability Service staff members nationwide. The use of a self-administered questionnaire in the current study facilitated rapid data collection for a large group of people (Bryman, 2016) in highly cost-effective manner (May, 2011) that facilitated rapid statistical analysis of results (Wisker, 2009).

Construction of the questionnaire: question formats

The questionnaire contained a mix of multiple-choice responses, yes/no answers, Likert-type items, and one rank-order item. The majority of the questionnaire items were Likert-type items used to query attitudes regarding dyslexia and dyslexia practice. There were two different response options depending on the question asked; either [strongly disagree – disagree – neither agree nor disagree – slightly agree – strongly agree] or [extremely unimportant – not important – neither important nor unimportant – important – extremely important]. The use of Likert-type questions provided more response nuance and variance than a blunt yes/no response option and also allowed participants'

responses to be converted to ordinal data that facilitated subsequent analysis by grouping variables (Joshi *et al.*, 2015).

The questionnaire was constructed on the Qualtrics online survey platform and was accessible for completion on PC, mobile and tablet.

Construction of the questionnaire: content

The construction of the questionnaire items was closely aligned to the research questions and the project's conceptual framework (Figure 7). The overall design of the questionnaire is outlined in Table 6.



Figure 7: Conceptual framework

Table 6: The design of the questionnaire by section

Section	Research sub-question	No. of	Conceptual	
		items	framework	
			themes	
1: Background		6	N/A	
information		0		
mormation				
2: Understandings	How do Disability Service staff and students understand	6	T 1.1, T 1.2	
of dyslexia	and characterise dyslexia?		and T 1.3	
	References: Elliot (2020); Elliot and Grigorenko (2014); Frederickson			
	and Cline (2015); MacDonaid (2019); Ryder and Norwich (2018); Task			
	adapted from itoms proviously utilised by Byder and Nerwich (2018)			
2. Dualanta	adapted from items previously utilised by Ryder and Norwich (2018).	12	7.2.1	
3: Dysiexia	How are current alsobility support provisions meeting	12	1 2.1	
supports	the needs of students with dyslexia?			
	Poteroncos: Accosistion for Higher Education Accoss and Disability			
	(2021): Griful-Freivenet et al. (2017): Newman and Madaus (2015):			
	(2021), Ginderreicher et al. (2017) , Newman and Iwadaus (2013), O'Byrne Lagoe and Lawlor (2019): Sheylin <i>et al.</i> (2017): Soni (2017)			
4: Accessing	How are current disability support provisions meeting	5	T 2.2, T 2.3	
supports	the needs of students with dyslexia?		and T 3.1	
	And			
	How do Disability Service staff and students view whole-			
	campus inclusive supports and teaching and learning			
	practices for students with dyslexia?			
	References: Aquino and Bittinger (2019); De Cesarei (2015); Eccles <i>et</i>			
	al. (2018); Hong (2015); Griful-Freixenet et al. (2017); Harkin, Doyle			
	and McGuckin (2015); Newman and Madaus (2015); Newman et al.			
	(2020); Byrne <i>et al</i> . (2014); Nic Fhlannchadha (2018).			
5: Universal	How do Disability Service staff and students view whole-	5	T 3.2 and T 3.3	
Design for	campus inclusive supports and teaching and learning			
Learning	practices for students with dyslexia?			
	References: Al-Azawei Serenelli and Lundovist (2016). AHEAD			
	(2017): Behling and Linder (2017): CAST (2018): Chandler Zaloudek			
	and Carson (2017): HEA (2015, 2018): Newman <i>et al.</i> (2020)			

The questionnaire passed through two validity checks in advance of the research commencing. Firstly, the researcher met with his supervisors (three experts in the field) to assess the content validity of each item generated via his initial literature review and associated conceptual framework (Taherdoost, 2016). Content validity is a judgement of whether the items on a research instrument are representative of the construct domain that the instrument intends to assess (Markus and Smith, 2010). Non-essential items were eliminated as part of this process. Secondly, the researcher piloted the survey instrument with three Disability Service staff members for feedback on *face validity* before finalising the instrument. Face validity is a subjective judgement concerning how well an item linguistically and analytically measures the construct it is supposed to measure, as assessed by the people who will be answering the question in the research itself rather than research experts in the field of study (Taherdoost, 2016). Items were further honed as part of this process, principally in terms of the wording. For example, in the section on Disability Supports, one pilot participant provided feedback that the original wording of "How important do you think the following Disability/Access Service supports are for students with dyslexia?" should be altered to place the group of concern at the start i.e. "For students with dyslexia, how important do you think the following Disability/Access Service supports are?" This suggested change was made in this question and subsequent items that employed a similar wording.

3.3.3 Participants

AHEAD maintains annual Disability Service statistics for a total of 27 HEIs nationally (AHEAD, 2020a). The questionnaire was circulated to a total population sample of every Disability Service staff member (excluding secretarial staff) working in these HEIs nationwide (N=106). This total population sample was reached by the researcher trawling through each HEI's Disability Service webpage and compiling a spreadsheet of every staff member employed in the service. A total of 43 participants completed the questionnaire, a response rate of 40.56%.

3.3.4 Procedure

The researcher contacted each participant by email to request participation in the research using their contact details publicly available on their HEI's website. The email described the aims of the study, how the person's personal data would be utilised and stored, and how to withdraw consent to participate. It also contained an embedded link to a YouTube video of the researcher explaining to camera the aims of the project and requesting participation in the questionnaire. A Plain Language Statement (Appendix C) was attached to the email. The email contained a URL to the online survey
that the participants were directed towards if they wished to participate in the research. Once participants clicked on the URL embedded in the email they were taken to an online informed consent form (Appendix D) before being granted access to the questionnaire items. The questionnaire took approximately 10-15 minutes to complete.

3.4 Research Phase 2

The results of Research Phase 1 were analysed and used to influence the direction of Research Phase 2, a multiple case study of three Irish HEI Disability Services.

3.4.1 Research worldview

Research Phase 2 adopted a worldview of constructivist interpretivism. This worldview arose in contradistinction to the certainties of positivism and is most commonly associated with qualitative research methods (Bryman, 2016; Robson and McCartan, 2016). Epistemologically, this worldview holds that meaning is subjective rather than objective, and is socially constructed through human social interaction (Wisker, 2009). Ontologically, this worldview shares a realist ontological foundation with the post positivist worldview of Research Phase 1 in seeing the world as a fixed reality that exists beyond consciousness; as Crotty (2004, p. 11) puts it "realism in ontology and constructionism in epistemology turn out to be quite compatible". In terms of axiology, it seeks to acknowledge the role of bias in research rather than overcome it (Creswell and Plano Clark, 2011).

Creswell (2003, p. 9), in reviewing the core aspects of a broadly constructivist approach, outlines the following key assumptions of this research perspective:

- Meanings are constructed by human beings as they engage with the world they are interpreting. Qualitative researchers tend to use open-ended questions so that participants can express their views.
- II. ...researchers seek to understand the context or setting of the participants through visiting this context and gathering information personally. They also make an interpretation of what they find... shaped by the researcher's own experiences.
- III. The process of qualitative research is largely inductive, with the inquirer generating meaning from the data collected in the field.

The core aspects of this worldview are evident in Research Phase 2, which was a qualitative multiple case study of three HEI Disability Services. Firstly, *open-ended questions* were utilised in the case

studies' interviews to allow participants to *express their views*. Secondly, *information was gathered personally* from the research context, which, in this instance, was a digital rather than physical space due to Covid-19 campus restrictions. Furthermore, *the research findings were interpreted* through the researcher's own experiences as a former Disability Service staff member. Finally, *meaning was generated from the data collected in the field* by undertaking a reflexive thematic analysis of the data (Braun and Clarke, 2006, 2020).

3.4.2 Research method

Stage 2 of the research utilised a multiple case study design. Case study research has been defined as:

a qualitative approach in which the investigators explore a bounded system (a *case*) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving *multiple sources of information* (Creswell, 2007, p. 73).

Case studies "integrate well with mixed methods research" (Guetterman and Fetters, 2018, p. 900) and are powerful tools in education research as they can address "why" and "how" questions that are important to educational practice (Timmons and Cairns, 2010). They have been particularly recommended for research into inclusive education as they are well suited to capturing the complexities of issues in this research area (Timmons and Cairns, 2010).

This project adopted a multiple case design. Multiple case design is favoured in case study research as with more cases and greater variability the overall findings become more compelling (Merriam, 2009). The boundaries of the case(s) in the current study are outlined in Table 7 (adapted from Redmond, 2020, p. 72). It is important to highlight that this is a collective multiple case study design where the phenomenon of interest (the role of Disability Service staff members in supporting students with dyslexia) is being examined rather than the case itself (the individual disability service) (Stake, 2006). As is evident in Table 7 below, each case study followed the same research protocol utilising three sources of evidence: a series of interviews with Disability Service staff members; a series of interviews with students with dyslexia who utilise the service; and a document analysis.

Table 7: Case boundaries

The	The role of HE Disability Service staff in supporting students with dyslexia.
phenomenon	
under study	
Setting	HEI Disability Service.
The unit of analysis	The role of Disability Service staff in supporting students with dyslexia.
Multiple case study design	The cases were selected via a purposeful sampling strategy built on the criteria of uniqueness, maximum variance and convenience (Merriam, 2009).
Case study	Interviews with Disability Service staff members.
protocol	Interviews with students with dyslexia registered with the Disability Service.
	• Document analysis of reasonable accommodation policy, most recent annual report,
	strategic plan, website pages and UDL or inclusive education report or guidelines.
The analysis of data	To be linked back to the research questions and conceptual framework to assess the role of Disability Service staff members.

This case study addressed *construct validity* (whether the right measures are being used to assess a construct of interest) by building its measures following a thorough review of the literature and in consultation with three experts in the field (the project's supervisors) and by using multiple sources of evidence (staff interviews, student interviews, document analysis) (Yin, 2018). *Reliability* (the reproducibility of results) was addressed by utilising a set case study protocol (Table 4) across the multiple cases and by maintaining a chain of evidence through the collation of data and subsequent analysis in NVIVO software (Yin, 2018).

Case method 1: staff interviews

Semi-structured interviews were carried out with 10 Disability Service staff members participating in the research from across the 3 research sites. Interviews were employed as they are an excellent method for research examining understandings, perceptions and constructions of topics that participants have a personal stake in, and are commonly used in case study research (Braun and Clarke, 2013; Yin, 2018). Semi-structured interviews in particular were utilised because they combine the rigour of an interview schedule with the flexibility to probe responses in more detail (Gray, 2014). The semi-structured interviews followed a list of pre-decided interview questions that all participants were asked in addition to a number of additional prompt questions that were employed if the participant had not addressed the research areas of interest in their initial response (Gillham, 2005). The interview schedule contained a total of ten core questions divided into five sections (Table 8). Each question had a number of prepared prompt questions that could be utilised by the researcher as necessary. The full interview schedule is available to view in Appendix E.

Section	Research sub-question	No. of	No. of	Conceptual
		questions	questions	framework
		staff	students	themes
			-	
1: Icebreaker	N/A	1	1	N/A
2:	How do Disability Service staff and students	1	1	T 1.1, T 1.2
Understandings	understand and characterise dyslexia?			and T 1.3
of dyslexia				
	References: Elliot and Grigorenko (2014); Frederickson and			
	Cline (2015); Ryder and Norwich (2018); MacDonald (2019);			
	Morton and Frith (1995); Task Force on Dyslexia (2001).			
3: Dyslexia	How are current disability support provisions	3	3	2.1, 2.2
supports	meeting the needs of students with dyslexia?			and T 2.3
	Eccles at al. (2018); Hong (2015); De Cesarei (2015);			
	Education Access and Disability (2013), Association for Higher			
	(2017): Newman and Madaus (2015): O'Byrne, Jagoe and			
	Lawlor (2019); Shevlin <i>et al.</i> (2017); Soni (2017).			
4: Inclusive	How do Disability Service staff and students view	4	3	T 3.1, T3.2
supports and	whole-campus inclusive supports and teaching			and T 3.3
practices	and learning practices for students with dyslexia?			
	References: Al-Azawei, Serenelli, and Lundqvist (2016);			
	Association for Higher Education Access and Disability (2017);			
	Behling and Linder (2017); Centre for Applied Special			
	Higher Education Authority (2015, 2019): Newman et al.			
	(2020).			
5: Wrap-up	N/A	1	1	N/A

Table 8: The design of the staff members and student interviews schedules by section

Case study method 2: student interviews

Semi-structured interviews were also carried out with 12 students with dyslexia from across the 3 research sites who were registered for support with their institution's Disability Service. The semi-

structured interviews again followed a list of pre-decided interview questions that all participants were asked in addition to additional prompt questions that were employed as required.

The interview schedule mirrored the schedule for staff members. Some items were removed as they were not relevant to students and others were re-worded as appropriate. The schedule, divided into 5 sections (Table 5), contained a total of nine core questions and additional prompt questions that could be utilised by the researcher as necessary. The full interview schedule is available to view in Appendix F.

For the interviews of both staff and students, validity was improved by ensuring that the interview questions concentrated explicitly on the research objectives (Gray, 2014). The interview questions in both interview schedules (i.e. staff and student) were drawn from the literature review/conceptual framework and were further honed following a pilot interview with a staff member and student with dyslexia respectively, principally to ensure clarity and brevity. For example, in the student interview the question of "As a student with dyslexia, tell me about your journey to higher education" was modified to "As a student with dyslexia, can you tell me about your journey to college/university?".

Researcher bias was addressed by the researcher using the same schedule and prompt question across all interviews and maintaining a neutral interpersonal style when conducting the interviews (Mittenfelner and Ravitch, 2018). The researcher refrained from indicating positive or negative agreement with statements made, from projecting his own thoughts on the subject into the interview process, or from being either too informal and friendly or too formal and cold in his behaviour. This approach was aided by the researcher's professional training in psychological assessment, which places great emphasis on clinician neutrality to reduce variance in outcomes due to assessor bias (McDermott, Watkins and Rhoad, 2014).

Case study method 3: document analysis

A document analysis of key Disability Service policies, reports and webpages from across the research sites was undertaken to triangulate the findings of the semi-structured interviews (Bowen, 2009). Document analysis is particularly suitable for case study research as documents are easily accessible and they offer evidence that has not been altered or influenced by the presence of the researcher (Merriam, 2009).

The analysis focused on five types of documents (where available):

- Disability Service reasonable accommodations policy
- Disability Service most recent annual report

- Disability Service strategic plan
- Disability Service website pages
- Disability Service UDL or inclusive education report or guidelines

These documents were surveyed for each participating service and a triage system employed to identify the final documents for review, based on whether they contained information with implications for the support of students with dyslexia (Yin, 2018). This resulted in the inclusion of 37 documents within the document analysis.

3.4.3 Participants

To identify cases, the current study employed a purposeful sampling strategy built on the criteria of *uniqueness, maximum variance* and *convenience*. *Uniqueness* relates to the case being a special exemplar of some feature that makes it worthy of exploration, *maximum variance* relates to the idea of having variance between the cases and *convenience* relates to the researcher's access to a case (Merriam, 2009). Three cases were identified based on these parameters (Table 9).

Setting	Uniqueness	Maximum variance	Convenience
Research Site A: University	University with very high proportion of students with disabilities	Medium sized university	Researcher had existing professional links to the university
Research Site B: Institute of Technology (I.T.)	I.T. with very high proportion of students with disabilities	Small Institute of Technology	Researcher had existing professional links to the Institute of Technology
Research Site C: University	University with very high total number of students with disabilities	Large university	Researcher had existing professional links to the university

Table 9: Multiple case sampling strategy

Research Site A, the first setting, was *unique* as it was a university with a very high proportion of students with disabilities (AHEAD, 2020a). It provided *maximum variance* as it was a medium sized university setting. It was *convenient* as the researcher had professional links to the institution.

Research Site B, the second setting, was unique because it was an Institute of Technology with a very high proportion of students with disabilities (AHEAD, 2020a). It provided *maximum variance* as it was

a small sized Institute of Technology setting. It was *convenient* as the researcher had professional links to the institution.

Research Site C, the third setting, was *unique* as it was a university with a very high total number of students with disabilities (AHEAD, 2020a). It provided *maximum variance* as it was a large sized university setting. It was *convenient* as the researcher had professional links to the institution.

Within each case, a *convenience* sampling strategy was employed to identify participants for interview; Disability Service staff were selected based on whoever was willing to take part, as were four students with dyslexia. The number of students with dyslexia who put themselves forward was far greater than the number required for interview, so, within this sample, students were purposefully selected from across a range of degree programmes and year groups as well as evenly split between male and female participants.

The total number of participants across services was 10 staff members (4 male, 6 female) and 12 students (6 male, 6 female). The staff members had a range of years of experience in the sector, from less than 1 year of experience to over 20 years of experience, with an average of 10.3 years. The staff members had a variety of roles as Head of Service (1), Disability Officer or similar (4), Learning Support Officer or similar (3) and Assistive Technology Officer or similar (2). Amongst the student participants, 11 were studying at undergraduate level and 1 was studying at taught postgraduate level. This postgraduate participant had, however, moved straight to postgraduate level through a recognition of prior learning procedure and it was their first full college experience of a degree level course. The average age of the student participants was 27.9 years and the median age was 23.5 years. They were studying at different stages of their degree, from first year (3), second year (2), third year (5) and fourth year (2). The degree subject areas were creative arts (2), humanities (3), science (1), engineering (2), nursing (2) and business (2).

3.4.4 Procedure

The researcher first reached out to each Head of Service by email to request participation in the project. A Plain Language Statement (Appendix G) explaining the project, its aims and its use of personal data was attached to the email, and a YouTube video introducing the aims of the project and what participation would involve was also embedded into the email. When approval was confirmed from the Head of Service and an online informed consent form completed (Appendix H), an online service checklist (Appendix I) was issued to the Head of Service or delegated staff member to complete, to provide an overview of service provision for students with dyslexia.

Individual staff members were then contacted by email to request participation. The email again included a plain language statement (Appendix J) and an embedded YouTube video introducing the project and detailing what participation in an interview would involve. Staff members completed an online informed consent form (Appendix K) before commencing their interview and were provided with the core research questions in advance.

The participating services circulated a recruitment email on behalf of the researcher to students with dyslexia registered with the service. This email contained a plain language statement (Appendix L) and an embedded explanatory YouTube video and a link to an online 'expression of interest' form. Students who wished to participate in the research entered their details into the expression of interest form and the researcher then contacted them by email. Students completed an online informed consent form (Appendix M) before commencing their interview and were provided with the core research questions in advance.

Interviews were held online via Zoom video-conferencing software. When each interview commenced, the plain language statement and informed consent form were shared with participants again on screen and participants were provided with a further opportunity to withdraw from the study if they wished. Each interview took approximately 45 minutes to complete. Participants were provided with debriefing material afterwards (Appendices N and O for staff and students respectively).

Key service documents for document analysis were identified by the researcher by studying each service's website.

3.5 Ethical considerations

Research ethics approval was provided by the DCU Research Ethics Committee (Appendix P). At all times throughout the study the research was guided by four core ethical considerations (Bryman, 2016, p. 125):

- Whether there is harm to participants
- Whether there is a lack of informed consent
- Whether there is an invasion of privacy
- Whether deception is involved.

3.5.1 Harm

Interview participants were provided with a debriefing notice after the interview, including details of disability and counselling services for students. The researcher, as a Chartered Psychologist with several years of experience working with similar clients, was also suitably qualified to conduct interviews on the topic and deal with any distress should it have arisen during the interview process. Fortunately, no incidents of this nature occurred.

This research project also sought to reduce any additional time pressures caused to participants by participating in the research. To this end, questionnaires were self-administered online by the participants at a time and location that suited them. Interviews were also held online at a time that suited each participant.

3.5.2 Informed consent

Potential participants were contacted about the research by email and provided with a Plain Language Statement regarding the project and were also sent a link to a simple video explaining the research project and what research participation would involve. The Plain Language Statement made it clear that a participant could withdraw their participation from the study and how to do so. Questionnaire participants indicated consent via an online consent form that blocked access to the questionnaire until it was completed. Interview participants completed an online Informed Consent Form before the interview commenced. Interview participants were also shown the Plain Language Statement and Informed Consent Form on screen at the start of each interview and provided with the opportunity to ask any questions or indeed withdraw participation should they have so wished.

3.5.3 Privacy

The online questionnaires were submitted anonymously to protect the privacy of individual respondents. During online interviews, the meeting was carried out on a private, password-protected meeting link which utilised a waiting room and was 'locked' to other participants as soon as the call commenced, as per the Dublin City University (2020) 'Zoom Guidelines for Staff'. The interview recordings were given a code name and stored in a password-protected folder on the university's cloud storage system. The interview transcripts were also given a code name and stored in a password-protected folder on the university's cloud storage system. All potential identifiers (e.g. name of institution) were removed from the interview transcripts to protect confidentiality and participant names were removed in the reporting of results.

3.5.4 Deception

The aims of the research project were clearly stated at the outset in the Plain Language Statement that accompanied requests to participate in the project. This Plain Language Statement was also brought up on screen and discussed prior to each interview commencing.

3.6 The impact of Covid-19 on the research procedures

This research was carried out during the year of public lockdowns during the Covid-19 global pandemic. This impacted on the research in three ways. Firstly, the research interviews were all conducted online via Zoom. However, the researcher had been conducting client meetings over Zoom for months prior to the research interviews commencing, due to the lockdown, and was both familiar with the technology and used to interacting with students and colleagues through video call, so there was no significant impact on the interview process.

Secondly, the researcher struggled greatly to secure HEI Disability Services for the case studies in Research Phase 2, which delayed the completion of this Research Phase. This difficulty in recruiting services may have been down to the fatigue in the HE system after a draining year of rapidly pivoting to providing services online to distressed students in a challenging atmosphere. Nonetheless, in the end, three services were brought on board for the project through the researcher's professional contacts.

Finally, the researcher contracted Covid-19 himself during the thesis write-up stage which led to a period out of work on sick leave and some delay to the writing process.

3.7 Summary

This research study adopted an explanatory sequential MMR design. Research Phase 1 was a selfadministered online questionnaire completed by Disability Service staff across HEIs in Ireland. Research Phase 2 was a multiple case study of three Disability Services in Irish HEIs. At all times the project bore in mind ethical considerations by providing structured information about the research to the participants via a Plain Language Statement and Informed Consent Form, and by anonymising data and storing all data safely and securely.

Chapter 4: Phase 1 Results

4.1 Introduction

This chapter will report on the analysis of the data gathered during Phase 1 of the research project; an online questionnaire circulated to a total population sample of all HEI Disability Service staff nationwide.

The chapter will present the findings under the following sections:

- Response rate
- Demographics
- Data analyses
- Results
 - Understandings of dyslexia
 - o Supports for students with dyslexia
 - Access to support
 - Universal Design for Learning

4.2 Response rate

43 responses were recorded (n=43) out of a sample of 106 (N=106). This represents a 40.56% response rate.

4.3 Demographics

4.3.1 Service setting

Twenty-eight respondents worked in a university setting, 7 in an Institute of Technology and 5 in a college.

4.3.2 Work role

The work roles of the participants are displayed in Table 10. Of the 5 participants who selected 'Other', 1 identified as an assistant psychologist, 2 as a 'Disability advisor', 1 as an 'Autism Student Support Officer' and 1 as a 'Learning Support Tutor'.

Table 10: Participants' work role

Role	Frequency	Percent
Head of Service	2	4.65%
Disability Officer	12	27.91%
Learning Support Officer	8	18.60%
Occupational Therapist	5	11.63%
Psychologist	1	2.33%
Assistive Technology Officer	9	20.93%
Inclusive learning lead	1	2.33%
Careers advisor	0	0.00%
Other	5	11.63%
Total	43	100%

4.3.3 Years' experience

On average, participants had 10.6 years' experience working in a Disability Service in a higher Education setting. Eighteen participants had less than 10 years experience and 25 participants had 10 years or more experience.

4.3.4 Qualifications

Participants were asked to provide a written description of the nature and level of their professional qualifications. An analysis was then performed on these written descriptions to identify each participant's a) highest level of qualification and b) whether they had a disability or special/inclusive education qualification at degree level or higher. In terms of level of qualification, 12 participants' highest level of qualification was at degree/higher diploma level, 26 at masters/postgraduate diploma

level and 4 at PhD level, while one participant's level of qualification was unclear from their response (Table 11).

Table 11: Participants' highest level of qualification

Level of qualification	No. of participants
Degree/Higher Diploma	12
Masters/Postgraduate Diploma	26
PhD	4
Unclear	1
Total	43

In terms of area of study, 19 participants had a degree level or higher qualification in a disability or special education related field and 16 did not. Of the 16 who did not, 7 had education qualifications at degree level or higher but not in special/inclusive education specifically. For the remaining 8 participants, it was unclear from their response what field of study their qualifications fell under (Table 12).

Table 12: Participants' disability or special education qualification at degree level or higher

Area of qualification	No. of participants	Percentage
Disability or special education qualification	19	44%
Non-disability related	16	37%
Area unclear	8	19%
Total	43	100%

4.3.5 Professional learning / training in dyslexia

62.79% (n=27) of participants reported that they had undertaken professional/learning training in dyslexia in the past. They were asked to describe the type of training/professional learning and an analysis of these descriptions was performed to ascertain the highest level of qualification in which the dyslexia training/professional learning was provided. The most frequent highest level of dyslexia professional learning was at certificate level (n=9) followed by non-accredited level (n=8), Masters level (n=4), Higher Diploma level (n=3) and Postgraduate Diploma level (n=3) (Table 13).

Table 13: Participants' highest levels of professional learning / training in dyslexia

Highest level surmised from description	No. of participants
Non-accredited	8
Cert	9
Postgraduate diploma	3
Higher Diploma	3
Masters	4
Total	27

4.4 Data analyses

The responses were coded and the data analysed in SPSS. The full SPSS codebook is available to view in Appendix Q.

4.4.1 Individual item response analysis

Individual response items were analysed using descriptive statistics. In the case of the Likert-type items, responses were also numerically coded (e.g. strongly disagree=1, disagree=2, neither agree nor disagree=3, agree=4, strongly agree=5) and analysed by a chi-square goodness of fit test across the five response categories to explore whether the proportion of responses in each category differed significantly from chance responding.

4.4.2 Analysis by grouping variable

Likert-type item responses were numerically coded and between-groups comparisons performed to determine whether there were any significant differences in responses between:

- Staff with fewer than ten years' experience and greater than 10 years' experience in a Disability Service role [SHORTHAND: YEARS' EXPERIENCE];
- Staff working in universities versus staff working in I.T.s/colleges [SHORTHAND: EMPLOYMENT SETTING];
- Staff who had undertaken previous professional learning in dyslexia and those who had not [SHORTHAND: PROFESSIONAL LEARNING IN DYSLEXIA].

As individual responses were not combined to create a scale score, each item response was treated as being of ordinal value (Leung, 2011) and non-parametric Mann Whitney U tests were utilised accordingly to explore whether there were differences in responses between the specified groups.

4.4.3 Missing values

The descriptive statistics reported were calculated on valid responses only, with missing values excluded.

For the Likert scale item responses which were compared between groups, the % of missing values was very small at less than 5% in all instances and therefore unlikely to result in biased statistical results (Bennett, 2001). Missing values were therefore ignored and omitted from the analyses. The number of missing values and equivalent percentage of responses is displayed in each relevant results table below for transparency.

4.5 Results

4.5.1 Understandings of dyslexia

Characteristics of dyslexia

Participants were asked what deficits they considered to be the key characteristics of dyslexia and presented with 12 response options derived from the definition of dyslexia utilised by the Task Force on Dyslexia (2001) (Figure 8). The most frequently selected deficits were those related to core literacy skills, with reading, spelling and writing selected by 100% (n=43), 97.5% (n=42) and 93% (n=40) of respondents respectively. In terms of cognitive deficits, phonological processing was selected by 86% (n=37), working memory by 79.1% (n=34) and retrieving information quickly from long term memory by 60.5% (n=26). In terms of sensory deficits, visual processing was selected by 67.4% (n=29) and auditory processing was selected by 55.8% (n=24). In terms of other deficits, sequencing was selected by 67.4% (n=29), organisation by 65.1% (n=28) and motor skills and skills automaticity were both selected by 23.3% (n=10).



Figure 8: Key characteristic deficits of dyslexia

Dyslexia conceptions

Participants completed five Likert-type items related to their conceptions of dyslexia (Table 14). The majority of participants (86.05%) agreed or strongly agreed with the statement 'Dyslexia is caused by differences in an individual's brain functioning' (M=4.02, S.D. = 0.938). By contrast, there was a lack of clear agreement as to whether 'Environmental factors such as an individual's social-cultural background can play a role in causing dyslexia' (M=2.65, S.D.=1.29), with less than half (48.8%) indicating that they agreed or strongly with this statement and nearly one third (32.56%) indicating that they either disagreed or strongly disagreed. A chi square goodness of fit test did not indicate that the response patterns to this item differed significantly from chance responding, but this can also be interpreted as indicating a lack of clear agreement across respondents on this statement. Despite a lack of agreement on whether environmental factors can *cause* dyslexia, the majority of participants (83.72%) either agreed or strongly agreed that 'Students with dyslexia are disabled not by their condition but by the lack of flexibility of their learning environment' (M=4.07, S.D.=0.9).

32.56% of participants indicated that they either agreed or strongly agreed with the statement that 'An individual either has dyslexia or doesn't have dyslexia', with 39.54% indicating that they either disagreed or strongly disagreed (M=2.98, S.D.=1). Only 20.93% of participants indicated agreement

with the statement that 'Dyslexia cannot be considered a distinct diagnostic category' (M=2.58, S.D.=0.97). Participants with less than 10 years' experience were significantly more likely to indicate agreement with this statement than those with 10 years or more experience (U = 133.5, p <.05, with a moderate effect size of 0.37 (Karadimitriou and Marshall, 2021). However, even within this group of those with less than 10 years' experience, the proportion indicating agreement with this statement only rose to a modest 33.4%. There were no other significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia.

Item	% strongly disagree (n=)	% disagree (n=)	% neither agree nor disagree (n=)	% agree (n=)	% strongly agree (n=)	M (SD)	Chi- square statistic	No. of missing values (%)
Dyslexia is caused by differences in an individual's brain functioning	4.65% (n=2)	2.33% (n=1)	6.98% (n=3)	58.14% (n=25)	27.91% (n=12)	4.02 (0.938)	χ ² (4, n=43) = 48.047, p<.001	0
Environmental factors such as an individual's social- cultural background can play a role in causing dyslexia	25.58% (n=11)	23.26% (n=10)	18.6% (n=8)	25.58% (n=11)	6.98% (n=3)	2.65 (1.29)	χ ² (4, n=43) = 5.256, p>.05	0
Students with dyslexia are disabled not by their condition but by the lack of flexibility of their learning environment	2.33% (n=1)	4.65% (n=2)	9.3% (n=4)	51.16% (n=22)	32.56% (n=14)	4.07 (0.9)	χ ² (4, n=43) = 38.512, p<.001	0
An individual either has dyslexia or doesn't have dyslexia	2.33% (n=1)	37.21% (n=16)	27.91% (n=12)	25.58% (n=11)	6.98% (n=3)	2.98 (1)	χ ² (4, n=43) = 18.744, p<.01	0
'Dyslexia' cannot be considered a distinct diagnostic category	9.3% (n=4)	46.51% (n=20)	23.26% (n=10)	18.6% (n=8)	2.33% (n=1)	2.58 (0.97)	χ ² (4, n=43) = 24.558, p<.001	0

Table 14: Conceptions of dyslexia

4.5.2 Supports for students with dyslexia

Supports for students registered with the service

Participants were asked to rate the importance of six forms of support for students with dyslexia on a series of Likert-type items (from 1 = 'not at all important' to 5 = 'extremely important'):

- exam accommodations;
- assignment accommodations;

- permission to record lectures;
- personal / social / emotional support;
- additional learning support / occupational therapy; and
- assistive technology supports.

All six forms of support were, broadly speaking, rated as important (Table 15). While the response options were not ranked by participants, the highest mean rating was exam accommodations (M=4.79, S.D.=0.41]) which 100% of participants rated as either 'very important' or 'extremely important'. The next highest mean rating was for assistive technology supports (M=4.66, S.D.=0.32), which 95.12% rated as either 'very important' or 'extremely important'. After this, permission to record lectures received the next highest mean rating (M=4.38, S.D.=0.62), with 85.71% rating is as either 'very important' or 'extremely important'. Assignment accommodations were rated the next highest, with a mean of 4 (S.D.=0.67) and 83.84% rating them as either 'very important' or 'extremely important'. Accommodations related to people-supports were the two lowest ranked out of the six, but still over four fifths of respondents (80.95%) rated personal/social/emotional support as either 'very important' or 'extremely important' (M=4, S.D.=0.67) and nearly the same amount (78.57%) also rated additional learning support/occupational therapy as either 'very important' or 'extremely important' (M=3.98, S.D.=0.74).

There were no significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia.

Table 15: Importance of supports commonly provided to students with dyslexia

Item	% not at all important (n=)	% slightly important (n=)	% moderately important (n=)	% very important (n=)	% extremely important (n=)	M (SD)	Chi-square statistic (X²)	No. of missing values (%)
Exam accommodations	0% (n=0)	0% (n=0)	0% (n=0)	21.43% (n=9)	78.57% (n=33)	4.79 (0.41)	χ ² (4, n=42) = 97.286, p<.001	1 (2.33%)
Assistive technology supports	0%	0%	4.88% (n=2)	24.39% (n=10)	70.73% (n=29)	4.66 (0.32)	χ ² (4, n=41) = 74.244, p<.001	2 (4.65%)
Permission to record lectures	0% (n=0)	2.38% (n=1)	11.90% (n=5)	30.95% (n=13)	54.76% (n=23)	4.38 (0.62)	χ ² (4, n=42) = 44.19, p<.001	1 (2.33%)
Assignment accommodations	0% (n=0)	0% (n=0)	16.67% (n=7)	42.86% (n=18)	40.48% (n=17)	4.24 (0.51)	χ ² (4, n=42) = 36.809, p<.001	1 (2.33%)
Personal / social / emotional support	0% (n=0)	7.14% (n=3)	11.90% (n=5)	54.76% (n=23)	26.19% (n=11)	4.00 (0.67)	χ ² (4, n=42) = 39.428, p<.001	1 (2.33%)
Additional learning supports / occupational therapy	2.38% (n=1)	2.38% (n=1)	16.67% (n=7)	52.38% (n=22)	26.19% (n=11)	3.98 (0.74)	χ ² (4, n=42) = 36.095, p<.001	1 (2.33%)

Supports for lecturers regarding students with dyslexia

Participants were asked to rate the importance of three types of support for lecturers regarding students with dyslexia:

- Guidelines on supporting students with dyslexia;
- Training on supporting students with dyslexia (including general supporting students with disabilities training); and
- Training on implementing universal design for learning.

All three forms of support were, broadly speaking, rated as important (Table 16). The highest mean rating was for training in universal design for learning (M=4.68, S.D.=0.71), which 90.25% of participants rated as either very important or extremely important. The next highest mean rating was for the provision of guidelines on supporting students with dyslexia (M=4.51, S.D.=0.59), which 95.12% rated as either very important or extremely important. The final type of support, training on

supporting students with dyslexia (including general supporting students with disabilities training), was rated by 85.37% of participants as either very important or extremely important.

There were no significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia.

Table 16: Importance of supports commonly provided to dyslexia regarding students with dyslexia

Item	% not at all important (n=)	% slightly important (n=)	% moderately important (n=)	% very important (n=)	% extremely important (n=)	M (SD)	Chi-square statistic	No. of missing values (%)
Training on implementing Universal Design for Learning	0%	2.44% (n=1)	7.32% (n=3)	9.76% (n=4)	80.49% (n=33)	4.68 (0.71)	χ ² (4, n=41) = 94.976, p<.001	2 (4.65%)
Guidelines on supporting students with dyslexia	0%	0%	4.88% (n=2)	39.02% (n=16)	56.10% (n=23)	4.51 (0.59)	χ ² (4, n=41) = 26.712, p<.001	2 (4.65%)
Training on supporting students with dyslexia (including general supporting students with disabilities training)	0%	2.44% (n=1)	12.20% (n=5)	29.27% (n=12)	56.10% (n=23)	4.39 (0.79)	χ ² (4, n=41) = 44.244, p<.001	2 (4.65%)

Supports for students with suspected but undiagnosed dyslexia

Participants were asked to rate the importance of three types of supports for students with suspected but undiagnosed dyslexia:

- Dyslexia consultation;
- Dyslexia screening service; and
- Full dyslexia assessment and diagnosis service.

The highest mean rating was for dyslexia consultation (M=3.98, S.D.=0.92), with 78.05% of respondents rating this as either very important or extremely important. The majority of participants (70.74%) also rated a dyslexia screening service as either very important or extremely important (M=3.9, S.D.=1.08). Participants with 10 years' experience or more rated this service as more important than those with less than 10 years' experience to a statistically significant level (U=134, p<.05), with a moderate effect size of 0.32. There were no other significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia. Participants were less aligned on the importance of a full dyslexia assessment and diagnosis service, as indicated

by the Chi-Square analysis of responses not detecting a significant difference from chance responding $(\chi^2 (4, n=41) = 8.634, p>.05)$. However, the majority of participants (60.98%) still rated this support as either very important or extremely important (M=3.59, S.D.=1.27). See Table 17.

Item	% not at all important (n=)	% slightly important (n=)	% moderately important (n=)	% very important (n=)	% extremely important (n=)	M (SD)	Chi-square statistic	No. of missing values (%)
Dyslexia consultation	2.44% (n=1)	4.88% (n=2)	14.63% (n=6)	48.78% (n=20)	29.27% (n=12)	3.98 (0.92)	χ ² (4, n=41) = 30.341, p<.001	2 (4.65%)
Dyslexia screening service	4.88% (n=2)	4.88% (n=2)	19.51% (n=8)	36.59% (n=15)	34.15% (n=14)	3.90 (1.08)	χ ² (4, n=41) = 19.122, p<.01	2 (4.65%)
Full dyslexia assessment and diagnosis service	7.32% (n=3)	17.07% (n=7)	14.63% (n=6)	31.71% (n=13)	29.27% (n=12)	3.59 (1.27)	χ ² (4, n=41) = 8.634, p>.05	2 (4.65%)

Table 17: Importance of supports provided for students with suspected but undiagnosed dyslexia

4.5.3 Access to support

Reasons for non-disclosure

Participants were asked to rank how common, in their opinion, 6 different reasons were for students with dyslexia choosing NOT to register for disability support, with 1 being the most common and 6 the least common. Table 18 indicates the breakdown of responses, with the lowest mean ranking indicating the most common ranked reason and so on. As is evident in the Table, 'They are worried about being stigmatised by lecturers or peers by registering of disability support' was ranked the most common reason (M=2.77, S.D.=1.75) closely followed by 'They want to manage their learning needs independently without registering for disability/access service support' (M=2.8, S.D.=1.25) and 'They are not used to independently seeking support for their additional learning needs' (M=2.83, S.D.=1.38). The fourth highest ranking was 'They don't know about the supports available' (M=3.33, S.D.=1.62). The lowest ranked reasons were 'They can avail of other mainstreamed supports to meet their learning needs (e.g. Writing Centre / Study Skills service)' in fifth place (M=4.5, S.D.=1.34) and 'They don't consider dyslexia a disability' in sixth place (M=4.78, S.D.=1.56).

Ranking (most to least common)	Reason	M (S.D.)
1	They are worried about being stigmatised by lecturers or peers by registering for disability support	2.77 (1.75)
2	They want to manage their learning needs independently without registering for Disability / Access Service support	2.80 (1.25)
3	They are not used to independently seeking support for their additional learning needs	2.83 (1.38)
4	They don't know about the supports available	3.33 (1.62)
5	They can avail of other mainstreamed supports that meet their learning needs (e.g. Writing Centre / Study Skills service)	4.50 (1.34)
6	They don't consider dyslexia a disability	4.78 (1.56)

Table 18: Rank-ordered most common reasons for non-registration

Diagnosis for support

Just over three quarters of participants (76.74%) agreed or strongly agreed that 'Under the current system, students who have literacy issues but who do not have a formal dyslexia diagnosis are excluded from receiving appropriate support' (M=3.79, S.D.=0.79) (Table 19). A smaller majority (54.76%) agreed or strongly agreed that 'The Disability/Access Service should provide support for students experiencing literacy difficulties regardless of whether or not they have a diagnosis' (M=3.43, S.D.=1.18). Mann Whitney U tests revealed that staff in I.T.s/colleges were more likely to indicate agreement with this statement than staff in universities to a statistically significant level (U=238.5, p<.05) with a moderate effect size of 0.31, and that staff with less than 10 years' experience were also more likely to indicate agreement than those with 10 years or more experience to a statistically significant level (U=138, p<.05) with a moderate effect size of 0.32. There were no other significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia.

Table 19: Responses to items relating to the requirement of a diagnosis for access to support

Item	% strongly disagree (n=)	% disagree (n=)	% neither agree nor disagree (n=)	% agree (n=)	% strongly agree (n=)	M (SD)	Chi- square statistic	No. of missing values (%)
Under the current system, students who have literacy issues but who do not have a formal dyslexia diagnosis are excluded from receiving appropriate support	0% (n=0)	16.28% (n=7)	6.98% (n=3)	58.14% (n=25)	18.6% (n=8)	3.79 (0.93)	χ ² (4, n=43) =50.28, p<.001	0
The Disability/Access Service should provide support for all students experiencing literacy difficulties regardless of whether or not they have a dyslexia diagnosis	2.38% (n=1)	28.57% (n=12)	14.29% (n=6)	33.33% (n=14)	21.43% (n=9)	3.43 (1.18)	χ ² (4, n=42) = 12.524, p<.05	1 (2.3%)

Mainstream versus disability service support

A small majority of participants (53.49%) agreed or strongly agreed with the statement that 'Mainstreamed supports like free assistive technology and Writing Centres can meet the needs of students with dyslexia without them availing of Disability/Access Service support', with a sizable minority (37.21%) disagreeing or strongly disagreeing (M=3.21, S.D.=1.19). The majority of participants (81.4%) indicated that they agreed or strongly agreed that 'Students with dyslexia have unique learning needs beyond literacy issues that require additional Disability/Access Service support' (Table 20).

There were no significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia.

Table 20: Mainstream versus disability service support

Item	% strongly disagree (n=)	% disagree (n=)	% neither agree nor disagree (n=)	% agree (n=)	% strongly agree (n=)	M (SD)	Chi- square statistic	No. of missing values (%)
Mainstreamed supports like free assistive technology and Writing Centres can meet the needs of students with dyslexia without them availing of Disability/ Access Service support	6.98% (n=3)	30.23% (n=13)	9.3% (n=4)	41.86% (n=18)	11.63% (n=5)	3.21 (1.19)	χ ² (4, n=43) = 20.140, p<.001	0
Students with dyslexia have unique learning needs beyond literacy issues that require additional Disability / Access Service support	2.33% (n=1)	4.65% (n=2)	11.63% (n=5)	58.14% (n=25)	23.26% (n=10)	3.95 (0.86)	χ ² (4, n=43) = 44.791, p<.001	0

4.5.4 Universal Design for Learning

UDL and students with dyslexia

Over three-quarters of participants (79.06%) agreed or strongly agreed that 'Re-designing all modules across a higher education institution in line with the principles of Universal Design for Learning is a realistic goal' (M=4.07, S.D.=.097). However, only 32.55% of staff agreed or strongly agreed with the statement that 'Students with dyslexia would no longer need to register for additional Disability/Access Service supports if all modules were designed according to the principles of Universal Design for Learning' (M=2.93, S.D.=1.15). See Table 21.

There were no significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia.

Table 21: The implementation of UDL and its impact on supports for students with dyslexia

Item	% strongly disagree (n=)	% disagree (n=)	% neither agree nor disagree (n=)	% agree (n=)	% strongly agree (n=)	M (SD)	Chi- square statistic	No. of missing values (%)
Re-designing all modules across a higher education institution in line with the principles of Universal Design for Learning is a realistic goal	0% (n=0)	11.63% (n=5)	9.3% (n=4)	39.53% (n=17)	39.53% (n=17)	4.07 (0.97)	χ ² (4, n=43) =28.777, p<.001	0
Students with dyslexia would no longer need to register for additional Disability/Access Service supports if all modules were designed according to the principles of Universal Design for Learning	2.33% (n=1)	48.84% (n=21)	16.28% (n=7)	18.6% (n=8)	13.95% (n=6)	2.93 (1.15)	χ ² (4, n=43) = 25.721, p<.001	0

The role of Disability Service staff in implementing UDL

The majority of participants (65.12%) agreed or strongly agreed that 'I am confident in my ability to advise lecturers on how to practically implement Universal Design for Learning' (M=3.72, S.D.=1.11) (Table 22). Staff in universities were more likely to indicate agreement with this statement than staff in I.T.s/colleges to a statistically significant level (U=101.5, p<.05), with a moderate effect size of 0.39.

However, when it came to what role they *should* play in this regard participants were more divided: participants were split neatly down the middle in their responses to 'Disability/Access service staff should take the lead in implementing Universal Design for Learning in their institution' with exactly 39.54% both disagreeing/strongly disagreeing and agreeing/strongly agreeing with this statement, with the remainder neither agreeing or disagreeing (M=3.09, S.D.=1.1).

The majority of participants (60.47%) did agree or strongly agree though that 'Disability/Access Service staff should have better pay and conditions if they are to assume a role in implementing Universal Design for Learning in their institution', with only 9.3% disagreeing or strongly disagreeing with this statement (M=3.79, S.D.=0.95). See Table 22.

There were no other significant differences in responses by employment setting or by years' experience or by professional learning in dyslexia.

Table 22: The role of Disability Service staff in implementing UDL

Item	% strongly disagree (n=)	% disagree (n=)	% neither agree nor disagree (n=)	% agree (n=)	% strongly agree (n=)	M (SD)	Chi- square statistic	No. of missing values (%)
I am confident in my ability to advise lecturers on how to practically implement Universal Design for Learning	2.33% (n=1)	16.28% (n=7)	16.28% (n=7)	37.21% (n=16)	27.91% (n=12)	3.72 (1.11)	χ ² (4, n=43) = 15.023, p<.01	0
Disability/Access service staff should take the lead in implementing Universal Design for Learning in their institution	2.33% (n=1)	37.21% (n=16)	20.93% (n=9)	27.91% (n=12)	11.63% (n=5)	3.09 (1.1)	$\chi^{2}(4, n=43) =$ 15.953 , p<.01	0
Disability/Access Service staff should have better pay and conditions if they are to assume a role in implementing Universal Design for Learning in their institution	0% (n=0)	9.3% (n=4)	30.23% (n=13)	32.56% (n=14)	27.91% (n=12)	3.79 (0.95)	χ ² (4, n=43) = 18.046, p<.01	0

4.6 Summary

This chapter has provided an analysis of the Phase 1 results gathered through an anonymous online questionnaire circulated to a total population sample of 106 HEI Disability Service staff nationwide, achieving a response rate of 40.56%. The responses indicated broad consensus on some issues but a diversity of views on others. However, there were very few between-group differences as analysed by work setting, number of years' experience, or whether participants had previous professional learning in dyslexia or not.

These results will be discussed in detail in Chapter 6 alongside the qualitative results from Phase 2 of the project.

Chapter 5: Phase 2 Results

5.1 Introduction

This chapter will report the analysis of the data gathered during Phase 2 of the research project. Phase 2 was a multi-site case study of three Disability Services in Irish HEIs. Data was gathered from three different sources of information across the services: 1) semi-structured interviews with staff (n=10); 2) semi-structured interviews with students with dyslexia (n=12); and 3) documents hosted on the services' websites (37 documents in total). These sources were combined to create one unified data set (Figure 9) which was subjected to reflexive thematic analysis (Braun and Clarke, 2006, 2020).



Figure 9: Research Phase 2 data set

The chapter will present the results of this process under the following sections:

- Profile of research participants
- Data analysis
- Thematic analysis results

5.2 Profile of research participants

22 individuals (10 staff members and 12 students with dyslexia) participated in interviews as part of the multiple site case study.

The staff members, 6 women and 4 men, had an average of 10.3 years of experience in a Disability Service support role. Six were working in universities and 4 in an Institute of Technology. As they were employed under slightly different job titles in the different participating institutions, their roles are simplified into three broad, generic categories: 'Learning Support Officer' for any member of staff primarily involved in providing academic support to students; 'Disability Officer' for any member of staff primarily involved in providing needs assessments and co-ordinating reasonable accommodations for students; and 'Assistive Technology Officer' for any member of staff primarily involved in providing assistive technology training and guidance to students. Five interviewees held Disability Officer roles, 2 held Assistive Technology Officer roles and 3 held Learning Support Officer roles. No further individual details shall be outlined in order to protect participant anonymity in what is a very small professional sector where individuals might be identified based on their gender, exact job titles or years of experience in the sector.

The student interview group featured 6 women and 6 men. The average age of the student participants was 27.9 years and the median age was 23.5 years. Eleven were studying at undergraduate (UG) level and 1 at postgraduate (PG) level. They were studying at different stages of their degree, from first year (3), second year (2), third year (5) and fourth year (2). The degree subject areas were creative arts (2), humanities (3), science (1), engineering (2), nursing (2) and business (2). Individual participant profiles are outlined below to illustrate the diversity of backgrounds and experiences of the research participant group. Specific details of gender and age are omitted to protect participant anonymity. Every student was registered with their institution's Disability Service under the category of dyslexia.

Student 1

Student 1 was studying engineering at UG level. They were in year 3 of the degree programme. They reported that they had received a relatively late diagnosis of dyslexia in 5th year of secondary school, detected through difficulties with the subject of English due to the jump in complexity in senior cycle English. They applied to the DARE scheme and secured a place in HE through the scheme.

Student 2

Student 2 was studying nursing at UG level and was in year 3 of the degree programme. They outlined how they had been diagnosed with dyslexia aged 8 and struggled with learning throughout school. When applying for the DARE scheme they no longer qualified under dyslexia due to its literacy scores cut-off but did under another diagnosis. They did not end up using the DARE scheme, however, as they achieved a HE place on the standard entry route without needing to compete for a DARE place.

Student 3

Student 3 was studying engineering at UG level and was in year 3 of the degree programme. They outlined how they had been diagnosed with dyslexia in second year of secondary school but that it had not overly affected their learning, although it lead to some frustration due to spelling difficulties when writing. They applied and qualified for the DARE scheme but not use it as they achieved sufficient grades to enter HE through the standard entry route.

Student 4

Student 4 was a mature student studying humanities at UG level and was in year 4 of the degree programme. They outlined how they had been diagnosed with dyslexia in primary school and had struggled with learning with dyslexia during secondary school and had dropped out of a different degree in a different institution several years previously. They had then re-entered HE as a mature student through the mature student access route.

Student 5

Student 5 was a mature student studying humanities at UG level and was in year 2 of the degree programme. They outlined how they had struggled with learning since primary school and had been assessed and received a dyslexia diagnosis in third year of secondary school. They outlined how they had applied to the DARE scheme but not met the literacy scores cut-off criteria but ended up entering HE immediately after secondary school through the standard entry route. They had then left HE before completing their degree but had now returned some years later through the mature student entry route.

101

Student 6

Student 6 was studying creative arts at UG level and was in year 4 of the degree programme. They outlined how they had struggled with learning throughout school and had dropped out of formal education as a teenager before completing secondary school. They had returned to FE later in life and then HE through the FE direct entry route into year 2 of their degree. They had struggled with the jump to HE and when they sought further support for their learning difficulties at this point dyslexia was identified and Disability Service registration ensued for the latter stages of their degree.

Student 7

Student 7 was a mature student studying creative arts at UG level and was in year 3 of the degree programme. They had previously studied a degree in another country and had been diagnosed with dyslexia at this point having experienced learning difficulties throughout school. They had returned to HE again later in life through the mature student access route.

Student 8

Student 8 was studying business at UG level and was in year 1 of the degree programme. They outlined how they had struggled with learning throughout school and received a diagnosis of dyslexia in late secondary school. They had accessed HE through the DARE scheme.

Student 9

Student 9 was studying business at UG level and was in year 3 of the degree programme. They outlined how they had first been identified with dyslexia in primary school and had struggled with their learning difficulties through secondary school. They had then accessed HE through the standard entry route having not been aware that the DARE scheme existed.

Student 10

Student 10 was studying nursing and was in year 2 of the programme. They outlined how they had been identified and struggled with dyslexia in secondary school and had previously completed an unrelated degree in a different institution as a school leaver but had gone on to work in a health setting and had the opportunity many years later to complete another nursing degree through their health setting employer and had therefore accessed their current degree programme through this route.

Student 11

Student 11 was studying humanities at UG level and was in year 1 of the programme. They outlined how they had been diagnosed with dyslexia in early secondary school and had struggled with reading and spelling. They had accessed HE through a dual DARE and HEAR scheme application.

Student 12

Student 12 was studying science at PG level and was in year 1 of the programme. They outlined how they had received support for dyslexia from primary school but had opted in secondary school to complete the leaving cert applied programme rather than the standard leaving certificate due to their ongoing learning challenges. They had then completed an FE course, entered the workplace and then returned to HE as a mature student on an access course before entering their current PG degree programme on a direct entry route from that course.

5.3 Data analysis

The unified data set was analysed utilising Braun and Clarke's 6-phase structured process for reflexive thematic analysis (Table 23) (Braun and Clarke, 2006, 2020). The analysis was conducted with the aid of NVIVO, a Computer Assisted Qualitative Data Analysis Software programme. The full NVIVO codebook for the reflexive thematic analysis is available to view in Appendix R.

Table 23: Braun and Clarke's (2020	, p. 4)	model of reflexive	thematic analysis
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Dha	se Name	Description
FIIC		
1.	Data familiarisation and writing familiarisation notes	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2.	Systematic data coding	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3.	Generating initial themes from coded and collated data	Collating codes into potential themes, gathering all data relevant to each potential theme.
4.	Developing and reviewing themes	Checking if the themes work in relation to the coded extracts and the entire data set, generating a thematic 'map' of the analysis.
5.	Refining, defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6.	Writing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Phase 1 of the reflexive thematic analysis process, **data familiarisation**, involved firstly transcribing the 22 interviews with the aid of Zoom's in-built voice recognition software. Then, additional thoughts and details about each interview were added to the interview notes that had been taken immediately after each interview was completed. These notes then became a memo in NVIVO under Phase 1 of the data analysis. Next, the 37 service documents taken from the service websites, which had already been read and triaged prior to commencing the analysis, were re-read again. Finally, initial coding ideas were generated in another memo in NVIVO to start the process of thinking analytically about the entire data set.

Phase 2, **systematic data coding of the data**, involved going systematically through all 22 interview transcripts and 37 documents individually and coding "interesting features of the data" (Braun and Clarke, 2006, p. 87) in NVIVO. The interviews were coded first, followed by the service documents. With each new transcript or document, existing codes were applied and refined and new codes generated. This Phase resulted in 115 codes being generated. In addition, when the systematic data coding across the entire data set was completed, another memo in NVIVO was created to note down initial thoughts on how codes might be combined into potential themes later in the analysis.

Phase 3, generating initial themes from coded and collated data, involved firstly creating a 'rough work' folder in NVIVO to play around with collating codes and to see what worked. In addition, another memo was created in NVIVO to start allocating provisional names to themes and see how they would fit into the overall data set. A hard copy of the Phase 2 code book was also printed as rough work and used to manually work out themes 'on the page' to aid the analytical process. At the end of Phase 3, 11 different initial themes had been generated for consideration.

Phase 4, **developing and reviewing themes**, involved undertaking two separate processes as recommended by Braun and Clarke (2006). Firstly, the data extracts for each individual theme were read back over to ensure they matched the theme itself. Some extracts were removed from themes and codes and others added in through additional coding from the source transcripts/documents. This resulted in some themes or sub-themes being combined or dropped as appropriate. A working memo in NVIVO helped with this process of fine-tuning the themes. Secondly, to complete Phase 4 of the coding the validity of each theme was checked in relation to the overall data set. Visualisations in NVIVO, namely explore diagrams and hierarchy charts (see Appendix S for examples), were employed to see where the data extracts originated from for each theme and to help consider the theme in relation to the overall data set. By the end of Phase 4, the project's themes had been reduced from 11 to 9.

Phase 5, **refining, defining and naming themes**, involved firstly naming each of the 9 themes and their constituent sub-themes. Then a check was carried out to ensure that each theme was discrete, easy to understand and wasn't trying to communicate too much at once about the data. This resulted in one theme being split in half and another new theme being created to leave a final total of 11 themes. A description of each theme was then written up and relevant data extracts were collated for each theme. Phase 6, **writing the report**, then involved adding to and refining the theme descriptions, selecting relevant data extracts and bringing this all together into the written narrative that constitutes the remainder of this chapter.

5.4 Results

Eleven themes were generated during the reflexive data analysis and are outlined in turn below.

- Dyslexia as a condition impacting literacy
- The impact of dyslexia on areas beyond literacy
- A medical model understanding of dyslexia
- Compensatory strategies to overcome difficulties
- A neurodiversity understanding of dyslexia
- Benefits of the dyslexia label
- Effective Disability Service supports
- Difficulties created by model of support
- Non-disclosure as a result of multiple factors
- Support for students without a diagnosis
- UDL as a positive vision for the future

The full case study qualitative codebook is available to view in Appendix R.

NOTE ON PROTECTING ANONYMITY: In order to protect participant anonymity in the following section, the student participants' areas of study are referred to in broad rather than specific terms (e.g. 'Humanities student' rather than 'English Literature student'). Likewise, as different institutions

utilised different specific titles for staff members that could potentially be used as identifiers, the roles of staff members quoted are simplified into three broad, generic categories; 'Learning Support Officer' for any member of staff primarily involved in providing academic support to students, 'Disability Officer' for any member of staff primarily involved in providing needs assessments and co-ordinating reasonable accommodations for students; and 'Assistive Technology Officer' for any member of staff primarily involved in providing assistive technology training and guidance to students. Furthermore, gender pronouns (she/he) describing the person making the statement are removed and replaced with 'they' in all circumstances.

5.4.1 Dyslexia as a condition impacting literacy

Codebook description: This theme relates to references within the staff and student interviews and service documents to dyslexia impacting on literacy skills. It relates to Theme 1.1 of the study's conceptual framework.

Nine out of 10 staff members interviewed cited difficulties with literacy when asked to describe dyslexia. These staff members were not unified, however, in what exact aspects of literacy were affected by dyslexia. For example, one Disability Officer in Research Site A referred to dyslexia as broadly impacting on multiple literacy areas: *"I see dyslexia, at a very basic level is a literacy difficulty, probably reading, writing and spelling"*. By comparison, an Assistive Technology Officer from Research Site B focused purely on reading at a single word level: *"I understand it as having difficulties with processing different aspects of reading, such as the hearing, you know and, you know, visualizing… the word and associating a sound with a word and associating meaning… so those processes being somehow unusual."*

Only half of the students (6 out of 12), however, referred to literacy difficulties when asked to describe dyslexia. Of those who did refer to literacy issues, again they were not unified in what aspects of literacy were impacted. For example, one Humanities student in Research Site B focused purely on spelling, describing her own difficulties in this area: *"my biggest problems would be like really small words, not being able to spell them"*. Another Engineering student in Research Site A, in another example, focused instead on difficulties with written communication: *"And I just felt like probably for me the problems I had was generally writing… I might try and get across my message on paper comes across, like, completely different to what I'm actually thinking"*.

These interview findings across the two participant groups appear to reflect the heterogeneous presentation of dyslexia (Łockiewicz, Bogdanowicz and Bogdanowicz, 2014) in that they highlight the differential impact of the condition on different people in different aspects of literacy. This diverse impact of dyslexia on different aspects of literacy is triangulated by the Service Documents. References to impacts on literacy appeared in 4 documents across all 3 Research Sites, with the documents highlighting how multiple different aspects of literacy were impacted by dyslexia. For example, a Dyslexia Fact Sheet from Research Site C stated that common difficulties include *"expressing knowledge in written form"* and that *"students with dyslexia have difficulties with spelling and grammar and find it challenging to impose order on their ideas"* and can experience *"reduced reading pace and reading comprehension skills"*.

5.4.2 The impact of dyslexia on areas beyond literacy

Codebook description: This theme relates to references to the impact of dyslexia on areas beyond just literacy. It relates to Themes 1.1 and 2.1 of the study's conceptual framework.

The theme of the impact of dyslexia on areas beyond literacy constituted three sub-themes as displayed in Figure 10.



Figure 10: Sub-themes under 'The impact of dyslexia on areas beyond literacy'

Cognitive difficulties

Fifty percent of staff members (5 out of 10) referred to cognitive difficulties experienced as a result of dyslexia. For example, a Learning Support Officer in Research Site B stated that *"it can often present with some cognitive kind of difficulties in terms of working memory and sometimes it takes students a*

bit longer to kind of retrieve information from the long term memory and there's phonological processing difficulties sometimes as well."

A higher proportion of students (66.66%; 8 out of 12) than staff referred to cognitive difficulties as a result of dyslexia. Some did so explicitly, for example an Engineering student from Research Site A who noted that, although he did not have much written work on his course, *"dyslexia still affects me in the steps of a maths piece of work because of like sequencing and working memory"*. Others did so implicitly, for example a Nursing student from Research Site A when referring to difficulties with working memory: *"I struggle to take notes, because if a lecturer says like a sentence and then they say another sentence I'll forget immediately what the sentence is"*.

Two service documents from 2 research sites also cited cognitive difficulties as an aspect of dyslexia, thereby triangulating the data from the interviews. For example, a Dyslexia Fact Sheet from Research Site C stated that dyslexia *"is typically characterised by inefficient information processing, including difficulties in phonological processing, working memory, rapid naming."* This phrase neatly matches almost word for word an extract from the definition of dyslexia developed by the Task Force on Dyslexia (2001), thereby demonstrating the continued use of this definition in practice a full two decades on from when it was composed.

Time demands / organisational skills

A far higher proportion of students (75%; 9 out of 12) than staff (30%; 3 out of 10) referred to time demands or organisational difficulties as a result of dyslexia. For example, one Humanities student from Research Site A stated that *"it takes me longer to do things, it takes me a bit longer to read things, it takes me a little bit longer in terms of comprehension, I need to put more hours in"*. Another Creative Arts student from Research Site B also explained that *"I have to spend four times the amount of time than my peers do to get kind of the same grade. Which means that my work that I'm actually better at and enjoy might suffer or I just have to work much harder."* These student perspectives highlighting the time demands of studying with dyslexia at HE level chime with previous research amongst students with dyslexia that highlighted this area of difficulty also (Soni, 2017; O'Byrne, Jagoe and Lawler, 2019).

Two service documents from across two separate Research Sites triangulated this staff and, in particular, student focus on both time demands and organisational difficulties. For example, one webpage from Research Site A stated that students with dyslexia may *"require more time to complete assignments than other students"* and that they *"may have significant organisational difficulties"*.
Emotional impact

Both staff and students referred to the emotional impact of learning and studying with dyslexia. In the case of staff, only 2 (out of 10) staff members, both from the same Research Site and both in a Learning Support Officer role, referred to this emotional impact. By contrast, two-thirds of students (8 out of 12) raised the emotional impact that dyslexia had on them. For example, one Nursing student from Research Site C explained how *"I think for a lot of people, people who I did know growing up, it [dyslexia] definitely did destroy them… in reference to confidence and their better, their better moral being, I think it definitely affected them. It did have an effect on me… even today, it still has that definitely has an effect on me… it is something that sticks with you." For some, this emotional impact of learning with dyslexia was a longstanding issue, stemming from negative school experiences. For example, one Business student from Research Site B stated that <i>"In secondary school it was way way worse… if you don't really have a strong support system in secondary school, you break down a lot… because it's overwhelming for me anyways in secondary school compared to college"*.

Only one service document from Research Site C highlighted how a dyslexia diagnosis can have a particular emotional impact on a student: *"Students who have been recently diagnosed may experience emotional difficulties and/or difficulties with practical tasks. Furthermore this can affect a student's self-esteem and confidence"*. The fact that this emotional impact only appeared in one service document out of 37 reviewed as well as in only 2 staff interviews demonstrates that there may be a lack of awareness within services around this key issue (as identified by the majority of students interviewed). This in turn perhaps implies that students may not necessarily reveal or discuss this emotional impact with Disability Service staff in their daily interactions.

5.4.3 A medical model understanding of dyslexia

Codebook description: This theme relates to references within the staff and student interviews and service documents to dyslexia in medical model terms. It relates to Theme 1.2 of the study's conceptual framework.

A high proportion (7 out of 10) of staff members referred to dyslexia in brain-based, medicalised terms. For example, one Disability Officer in Research Site A stated that *"it's some neurological condition… there's a high instance rate, there's a lot more people, probably, than they know that they have it… it's just purely neurological."* Or, as a Learning Support Officer in Research Site B put it, *"I don't think it's environmental, I think it's just the way the brain is wired."*

A much lower proportion of students (3 out of 12) focused on dyslexia in these medicalised, brainbased terms. For example, one of these, a Nursing student from Research Site A, poignantly stated that *"from what I've done my research, it seems to be a form of brain damage. Me and my friend used to joke about it, we're both damaged and how we could unlock the secrets of the world if we didn't have dyslexia."*

One service document, a Dyslexia Fact Sheet from Research Site C, also referred to the neurological basis of dyslexia: *"Dyslexia can be described as the neurological, cognitive and behavioural levels."*

These findings align with a biomedical model view of dyslexia as 'disorder' "resulting from a genetic and/or neurological defect" (MacDonald, 2019, p. 5). In addition, both staff (8 out of 10) and students (11 out of 12) referred to dyslexia as a lifelong condition, in line with a medical model understanding of dyslexia resulting from a "biological impairment [that] affects people's life course, which... is permanent" (MacDonald, 2019, p. 4). As one Nursing student from Research Site C put it: *"I think that it's something that you have for life... it is something that's part of you."*

5.4.4 Compensatory strategies to overcome difficulties

Codebook description: This theme relates to references within the staff and student interviews to students being able to use compensatory strategies to overcome or partially overcome their learning challenges. It relates to Themes 1.2 and 2.1 of the study's conceptual framework.

Both staff and students strongly promoted the use of compensatory strategies to overcome academic challenges. Amongst staff members, 70% (7 out of 10) spoke about the ability of students with dyslexia to overcome their learning difficulties using compensatory strategies. For example, one Learning Support Officer in Research Site A stated that *"those young people that I have known have actually done extremely well because they have embraced technology, embraced different things, different methods or different ways around this and, yes, sometimes it has to be around things"*.

Another Learning Support officer in Research Site B also noted that "I do think that there are definitely ways that you can... compensate for, you know, that different way of learning... there's so much now in terms of technology use... I think even the online learning... a lot more lecturers are recording their lectures and... you have access to the slides and all of that which can help". This comment hints towards the difference environmental factors such as availability of technology platforms can make to the impact of dyslexia on the individual, with two other staff members making similar comments

focused on environmental factors. When taken into consideration alongside the themes already outlined above, this hints towards a biopsychosocial understanding of dyslexia as being evident amongst some staff members that identifies a bio-medical basis to dyslexia but also acknowledges the role of the environment in how dyslexia impacts the individual.

It is noteworthy that an even larger majority of students (83.33%: 10 out of 12) spoke about how they had utilised strategies to overcome challenges and improve their learning. In one example, a Business student from Research Site B referred to assistive technology as being helpful: *"when I got into uni… I got a reading pen, I got loads of stuff in college, which in secondary school it never existed for me in general, like, so it was like a step up for me and helped me out."* This comment aligns with the staff comments citing the importance of the use of assistive technology as a compensatory strategy. In another example, a Nursing student in Research Site C explained how *"when I went back to college… I had to come up with… protocols… about soaking up the information… I had to come up with my own approach on how I was going to take in information, how I was going to soak it up, especially science based… subjects"*.

5.4.5 A neurodiversity perspective on dyslexia

Codebook description: This theme relates to references within the staff and student interviews that speak to a neurodiversity perspective on dyslexia. It relates to Theme 1.2 of the study's conceptual framework.

Several students and staff spoke about dyslexia from a neurodiversity perspective, by either referring directly to the concept of neurodiversity or by alluding to some of the hallmarks of this conceptualisation of dyslexia in terms of dyslexia being a different way of thinking and learning or dyslexia bearing unique gifts or talents to the individual (MacDonald, 2019; Clouder *et al.*, 2020).

Fifty percent of staff members (5 out of 10) alluded to the concept of neurodiversity. For example, one Assistive Technology Officer in Research Site B stated that *"I would just see it as kind of a neuro diversity issue… it's like being colour blind, that's not really considered an impairment, or, you know, people just have different ways of seeing things and dealing with things."* Another Disability Officer in Research Site C focused on some of the benefits associated with dyslexia: *"I certainly come from it, as I do with most of the kind of neurodiverse disabilities, that like, that's how your brain is… this is the way you think and yes, that can come with challenges, but it can come with some benefits as well. So it can come with holistic thinking, you know, things like that, a different way of looking at a problem."*

A high proportion of students (83.33%: 10 out of 12) also alluded to this idea of neurodiversity, albeit less directly than staff members. For example, one Nursing student in Research Site C explained dyslexia as a different way of thinking: "*I think it's your process of how you take in information, maybe. I think it's how you visualize, how you see something… in an educational sense, that information... that's presented to you, it's how you decipher it maybe.*" Some students also referred positively to the benefits of dyslexia as a different way of thinking, for example one Engineering student from Research Site A said "I kind of thought about my dyslexia being in some ways a benefit to me. And it's made me *think differently and that's kind of beneficial in an engineering stream… sometimes I see it as a positive, you know.*"

This neurodiversity perspective on dyslexia as expressed by students in particular aligns with previous research amongst HE students with dyslexia (Soni, 2017; O'Byrne, Jagoe and Lawler, 2019). Overall, when this theme is considered in relation to the themes already discussed above, a picture begins to emerge of broadly nuanced views of dyslexia held by both staff and students that acknowledge the heterogeneity of the presentation of dyslexia, that see it as impacting not just on literacy but also other areas of functioning, and that conceptualise dyslexia beyond the parameters of a strict medical model understanding.

5.4.6 Benefits of the dyslexia label

Codebook description: This theme relates to references within the student interviews to benefits of receiving the dyslexia label. It relates to Theme 1.3 of the study's conceptual framework.

Several students (7 out of 12) mentioned the benefits of receiving a dyslexia diagnosis. For 4 of the students this benefit was referred to in terms of opening up access to resources at both school and HE level. For example, one Humanities student from Research Site B discussed the benefits at school level: *"I was in third year and I got assessed and that's when my diagnosis came through and that was really great. I was, I was exempt from Irish, which was my main problem, I couldn't do languages. And I had a spelling waiver for my junior cert, which was great."* And another Nursing student in Research Site A concentrated more on benefits at HE level: *"I know you shouldn't label yourself, but you know if you are struggling there's no point hiding away from it and being scared of the label. Like you're better off, you know, accepting the help."*

For the other 3 students the benefit of the dyslexia label was more in terms of personal understanding of their learnings needs or educational experiences or to bolster self-esteem. For example, for one Creative Arts student from Research Site B who received a diagnosis as an adult *"it was like an identification and it was like a kind of a bit of understanding of 'oh okay that's, that sort of makes sense now' as to some of the things that had happened"*. Another Creative Arts student from Research Site B, a mature student who had only recently been identified as having dyslexia, commented that *"you know, I always had this inadequate feeling… it's like I never knew I had it and now… I'm glad, I glad I know I have it now… I used to think that I was thick. I thought I was stupid, you know"*.

These findings align with Soni's (2017) previous research findings regarding the benefits of receiving the dyslexia label for students studying at HE level in the UK context.

5.4.7 Effective Disability Service supports

Codebook description: This theme relates to references within the staff and student interviews and service documents to aspects of Disability Supports working well for students with dyslexia. It relates to Themes 2.1 and 3.1 of the study's conceptual framework.

This theme is broken into four sub-themes as presented in Figure 11.



Figure 11: Sub-themes under 'Effective Disability Service supports'

Many students' needs met with lower level supports

Disability Services offer a range of supports to students, some of which are lower level in terms of the amount of time and input they require from staff, and some of which are higher level in the same

regard. For example, notification to lecturers of students' needs, provision of exam accommodations and provision of licences to easy-to-use assistive technology (such as Grammarly) are lower level supports. By comparison, additional specialist tutoring due to student absences (such as for students missing class due to medical conditions) or repeated individual one to one support (such as in-depth assistive technology training for complex technologies) are examples of higher level supports that require staff time or additional financing.

Four (out of 10) members of staff alluded to students with dyslexia as typically being a cohort that availed of lower level supports. For example, one Disability Officer from Research Site C noted that "we would meet with students for the needs assessment at the start. And oftentimes we would never see those students again. So they get set up with assistive technology and exam accommodations and they can access workshops and all the rest of it and off they go and they're fine and you don't hear from them."

Another staff member, a Disability Officer from Research Site A, explained how "the most common things they want are very low level supports, they want... the baseline stuff we call it is what everybody's entitled to. That's exam accommodations and LENS [Learning Educational Needs Summary that is circulated to lecturers] report, free stuff, technology guidance that we give them off the web, then access to groups that we run and so on, so they're all defined as, they're processing out, they don't come back to you."

Four (out of 12) students also alluded to their happiness to work independently once their reasonable accommodations were in place without requiring ongoing engagement with the Disability Service or higher level supports. For example, a Nursing student from Research Site C stated that *"I haven't personally engaged with them… I've just kind of cracked on with it. The supports that I was given initially through the software has been massively beneficial"*. This experience was echoed by an Engineering student from Research Site A: *"I haven't actually engaged a lot with the Disability Service. In first year I did straight away get involved and I got my LENS documents so I at least had that baseline. I was able to get my exam accommodations… But through the day to day of my course I haven't really availed of much"*.

In combination these accounts suggest that the needs of many students with dyslexia are being met with lower level supports.

Beneficial lower level general supports

Participants referred to three categories of lower level general supports that were particularly beneficial to students with dyslexia: assistive technology; exam accommodations; and lecturer liaison.

The majority of staff (9 out of 10) and students (9 out of 12) alike stressed the benefits of assistive technology. For example, one Learning Support Officer from Research Site A explained that *"we do provide assistive technology, so things like read and write. There's so many, so many tools out there now compared to, you know, 15 years ago, and the fact that pretty much all communication is digital in fact, there, and now we've gone to remote examinations, a lot of the barriers have been removed and a lot of students I've spoken to have said things are much easier now, now we've dispensed with paper and pen responses. So first of all, it would be technology".*

Another example from a Business student in Research Site B demonstrated how good the quality of the technology at HE level was perceived: "I do find speechify useful... I do find the reader's pen more useful in general, like, because I can wear an earphone and just listen to what I'm reading so yeah that's really helpful. I think technology also, there's a couple of like different training in college, it's just what you need in general you can get". This staff and student emphasis on assistive technology was triangulated by Service documents from all 3 Research Sites. For example, a webpage from Research Site C on how to manage dyslexia stated that:

Texthelp Read and Write is installed on all computers on campus. It consists of a suite of tools that can assist students in reading course material and composing essays... Students can use Grammarly to analyse their essays and identify grammar errors... The Livescribe Smartpen is an electronic pen that has a built-in recorder. The pen synchronizes the recording with the notes taken by the student in class.

In addition to the noted benefits of assistive technology support, several staff (8 out of 10) and students (5 out of 12) also alluded to the benefits of exam accommodations. For example, one Disability Officer from Research Site A stressed the importance of these exam accommodations: "*extra time, the use of a computer and like the sticker to disclose that you have a disability so that you get a spelling and grammar waiver, so to speak, or avail of marking guidelines in the exams... I suppose the most common supports students get if they have dyslexia, or the ones that I suppose most needed, because they're crunch time in terms of passing exams and progressing." And, for example, one Science student from Research Site C noted that "The extra time on exams is great, because it does give me that extra time to read and really understand what I'm doing and knowing that like for every*

hour I get another 10 minutes, so, you know, just having that in the back of my head and 'it's okay, you have the time to get through it'."

Finally, in terms of these lower level beneficial supports, 1 staff member (out of 10) and 4 students (out of 12) also referred to the importance of lecturer liaison in ensuring members of faculty were aware of students' needs. The staff member, a Disability Officer in Research Site B, noted that "based on the feedback, and just on how things run in Research Site B, informing the lecturers... of their difficulties is really important, just having that communication piece that everybody's aware". This importance of awareness was also referred to by a Business student from Research Site B who explained that "it's been really helpful... like all my lecturers know I have dyslexia... I speak to them sometimes after the class for five minutes or two minutes if I'm struggling in a particular part of the lecture."

Two service documents also referred to lecturer liaison. One, an annual report from Research Site A stated that *"In total 27 of 35 schools/departments were met by the Disability Service in 2019-20…these meetings are invaluable as they provide the Disability Service with the opportunity to listen, learn and share ideas with schools, and allow the service to work with schools towards the common goal of supporting students."*

Overall, these findings regarding beneficial lower level supports partially align with the findings from previous research studies conducted with students with dyslexia in both the UK and Ireland, with the participants in these studies similarly stressing the value of technology and exam accommodations in particular (Soni, 2017; O'Byrne, Jagoe and Lawler, 2019).

Beneficial higher level supports

While, generally speaking, these lower level supports of technology, exam accommodations and lecturer liaison were seen as meeting the needs of many students with dyslexia, some staff and students still stressed the value of higher level supports for a small number of students, principally in the form of individual staff consultations. The first such area of noted individual support was in managing academic writing demands, as noted by several members of staff (8 out of 10) and students (4 out of 12). For example, a Disability Officer from Research Site C stated that *"I've a lot of discussions over the kind of the physical act of writing."* And a Disability Officer in Research Site A observed that *"you hear of students getting value from… academic support, for academic writing and referencing and all that sort of stuff"* which suggests the work provided in this space by Learning Support Officers is valuable to students with dyslexia. Indeed, one Creative Arts student from Research Site B, when

discussing the Learning Support they received, noted that "It was amazing that I could get to show my work to [Anonymised Person], and she'd look it over and she'd tell me whether I'm getting me point across, she'd tell me whether it's unnecessary, what I'm saying, she'd tell me if I left something out... it enabled me to just write instead of second guessing myself all the time."

Two service documents also mentioned academic writing support, for example one webpage from Research Site C that provided guidance to students on managing dyslexia pointed students towards "learning support... through group workshops... designed to help you learn the skills you need to succeed at university. Learning support workshops include... Academic writing... Research skills... Avoiding Plagiarism".

The second area of higher level support deemed valuable by both staff (6 out of 10) and students (6 out of 12) was pastoral support. For example, one Disability Officer from Research Site A opined that "I think we bring a kind of a human element to it that people value... and certainly as a transitional age, in terms of gaining confidence, the students feel that they do need somebody that understands them... it's our professional role to be in the position of having that duty of care where we make efforts to understand them, and they need that transitional help because no one else is going to give them that that specific support."

The value of this human element was supported by a Business student from Research Site C: "*it felt like I always had someone to go to. And I think that is important… I know there's people like and they don't have dyslexia, but they do struggle in college like and they probably don't have anyone to go to. That's why… Access is really important for me". Another Engineering student in Research Site A noted that even if they were not regularly engaging with the Disability Service for support it was still "really nice to know that there is someone there". This emphasis on pastoral support may reflect the emotional impact of dyslexia raised by the majority of students (as discussed in Theme 2.3).*

These staff members' and students' views highlighting the continued value of higher level, personal supports align with O'Byrne, Jagoe and Lawler's (2019) research findings that students with dyslexia in an Irish HE setting desired this type of ongoing support.

Shortcomings of mainstream services

A picture emerges from the subthemes discussed above that aspects of Disability Services supports are working well in meeting the needs of students with dyslexia. However, when the topic of mainstream services such as Writing Centres or Student Learning units came up, there were less positive comments from some participants. Six (out of 10) staff members pointed out the shortcomings of these types of service provision as currently configured. For example, one Learning Support Officer from Research Site A stated: "If you take the staffing levels... the average number of staff I think working on providing academic support is between I'd say two and five people. If you have a student body of 18,000 that's an impossibility to address everybody's specific learning difficulty... very few people have said "yeah I have actually been there"... the most often quoted statement is "I didn't really get anything out of it" and I think the difficulty is that if you have a large body of students to provide that... mainstream academic support to it's difficult to cater for everybody's prognosis."

Another Disability Officer from Research Site A posited that for that small cohort of students "who need support, need one to one, they're not going to get that in those places... it's mostly group stuff, some people just are not able for that... there's a mix of issues intersection of, you know, deprivation, mature, mature entry, disability stuff all their sort of life experience stuff like they just need an awful lot more help." These concerns echo Hong's (2015) research from the US context which found that while students with disabilities preferred to avail of mainstream supports rather than Disability Service supports, but that they required increased provision from mainstream services beyond what was available to the general student body.

Two students also pointed out the lack of appeal of these mainstream services. One Humanities student from Research Site A recalled how they "went to an essay guidance thing on writing essays... I probably wouldn't go back to another, I got in touch with them about something else, but they weren't able to answer the question." Another Nursing student from Research Site C noted their lack of interest in attending this type of support: "I haven't, I haven't personally engaged with them...I kind of fear that if I went to one of the writing labs I think it would throw me off if I was completely honest".

5.4.8 Difficulties created by model of support

Codebook description: This theme relates to references within the staff interviews to difficulties created by the current model of support for students with dyslexia. It relates to Themes 2.1 and 2.2 of the study's conceptual framework.

The theme discussed above reveals the positive views that many staff and students held about the benefits of the current supports provided by Disability Services. However, several members of staff (a total of 6 out of 10) also spoke about different difficulties created by the current HE system of support.

Firstly, 5 (out of 10) staff members referred to the difficulties created by the HE system relying on diagnosis for access to disability supports funded through the Fund for Student with Disabilities (FSD).

For example, one Disability Officer from Research Site B pointed out that "there's obviously students that don't have the formal diagnosis but it's very evident that they would fit that criteria, so they would not be supported in terms of getting funded supports with the HEA FSD." Another Disability Officer from Research Site A member pointed out how this funding model constricts their model of service provision: "In order to avail of supports... you need to have a disability, and the only way we can run a disability service is to have funding for as many students as are eligible for the funding. So as much as we would like to be able to give supports to anyone who just requested them or needed them, regardless of even not only evidence of disability, but even regardless of even having a disability at all, the practicalities of running the service in the way that we currently run it are that we're somewhat reliant... on the financial structure which is kind of based off the medical model, of a set of limited resources that are cost sensitive or time sensitive, someone controlling them."

Another Disability Officer in Research Site C highlighted how HEIs often try to work around the limitations of the funding model, but that this can lead to unequal access to supports across different HEIs nationwide: "what you don't want is that in Research Site C a student will come in with, you know, scores done by the teacher or something and we'll get all the supports going and then they go to Anonymised Institution and they get nothing, you know, you want to be sure that whatever approach we take that it will be... across the board." Based on these comments, it seems that some staff members see the current diagnosis-dependent system as impeding their ability to meet the needs of some students with undiagnosed dyslexic-type difficulties.

Secondly, 4 (out of 10) staff members highlighted the differences between the HE system and the support structure at second level (which no longer requires formal psycho-educational assessment of dyslexia) as presenting a challenge to service provision. For example, one Disability Officer in Research Site A noted that: "At school level and for DARE I know that model is in the process of changing at the moment... you no longer have to do the full educational psychology assessment... you can just do the literacy tests... So that, that's probably where we're going, and... if we fast forward five or 10 years down the road if we get to that place where students won't have these big long 10 to 20 page reports but they'll have, you know, two or three pages, saying that these are the tests carried out and the literacy areas are this, this and this, and therefore this person need support in these literacy areas. So then we will be supporting people for literacy difficulties, but not necessarily dyslexia."

5.4.9 Non-disclosure as a result of multiple factors

Codebook description: This theme relates to references within the staff and student interviews to non-disclosure occurring as a result of multiple different factors. It relates to Theme 2.3 of the study's conceptual framework.

A picture begins to emerge, based on the themes discussed above, that Disability Services as currently configured are arguably working well in supporting students with dyslexia registered for support, but, simultaneously, the current diagnosis-dependent service configuration sometimes impedes the ability of staff to meet the needs of students with undiagnosed dyslexic-type difficulties. The next theme picks up on another problem with this service model: its reliance on self-disclosure. International research demonstrates high levels of non-disclosure amongst students with disabilities at HE level (De Cesarei, 2015; Newman and Madaus, 2015). The scale of this phenomenon is unknown in the Irish context, but three primary reasons as to why it might occur emerged in the staff and student interviews and service documents and these are broken into three sub-themes as displayed in Figure 12.



Figure 12: Sub-themes under 'Non-disclosure as a result of multiple factors'

<u>Stigma</u>

Seventy percent of staff members (7 out of 10) raised stigma as a reason for non-disclosure of dyslexia amongst students with dyslexia. For example, one Assistive Technology Officer in Research Site B opined that "some students they just don't want to bring attention to themselves, they might feel they'd be treated differently or seen as stupid, as the old cliche, and stigma have it." Another Disability Officer in Research Site A pointed out that "people, particularly in a small area, professional wise or

career wise, they feel that... there's some level of stigma or shame associated with dyslexia, or that... it might go against me. And that could be based on real or imagined fears of discrimination or stigma."

This staff focus on stigma, and the fear of being treated differently, was echoed by the 9 students (out of 12) who raised stigma as a barrier to disclosure. For example, a Business student in Research Site B said that *"the reason why students don't really go there is there's still a stigma where like 'I don't want everyone to like treat me different from another person in my class because I'm dyslexic'"*. This social pressure was also raised by a Humanities student from Research Site A: *"A lot of people are embarrassed by it. They don't want it to be highlighted."*

In terms of service documents, one video on a webpage in Research Site B also featured a Disability Officer noting the impact of stigma on non-disclosure for all disability types: "there's, you know, bit of a stigma around being registered with the Disability Support Service so I think it's really important to highlight that this service is a confidential service."

Lack of awareness of supports

Three (out of 10) staff members raised lack of awareness of supports as another potential reason for non-disclosure. For example, one Assistive Technology Officer from Research Site A noted "some of them [students with dyslexia] are just not aware of services within college, even though we're willing to promote them" and that some students only find their way to the service when they have started failing assessments and "they're worried or repeating and then... their school might point them in the direction of ourselves."

A far higher proportion of students (11 out of 12) than staff picked up on lack of awareness of supports as a reason for non-disclosure, which suggests that staff may not realise how significant a factor this may be. For example, a Business student in Research Site B pointed out that *"people don't really know there's support"*. Interestingly, another Engineering student in Research Site A highlighted that even the term 'Disability Service' is problematic in promoting awareness of supports, saying that *"I don't see myself having a disability... I think that if I didn't know I had dyslexia, and I was having troubles, and I needed to seek out help, I wouldn't go 'that's it I'm disabled I need to get help'. I'd look for it somewhere else"*. This again relates back to conceptions of dyslexia, suggesting that the student didn't view dyslexia as a 'disability' condition á la a medical model understanding, and that the current branding of 'Disability Services' risks alienating students with dyslexia.

Strive for independence

The final factor causing lack of disclosure as highlighted by a smaller number of both staff (3 out of 10) and students (2 out of 12) was a potential strive for independence by students with dyslexia when they reach HE. For example, one Disability Officer from Research Site A explained this scenario: "So, they get to higher education and... in a sense they're an adult and... they felt that maybe if they had some sort of support before that they never really needed it. And so either they want to see how they get on without it, or... they want... to make a comparison... Sometimes I'll meet a student who's in second or third year and they'll have had dyslexia... diagnosis since... maybe 10 years previously... and you might ask them, you know 'why didn't you register before?' and they might say 'oh I didn't think I needed the support' or 'I wanted, I wanted to kind of see how I got on without them'."

An Engineering student from Research Site A supported this view, seeing non-disclosure as an active, purposeful choice: *"I think if you don't want the supports or accommodations or to register then you mustn't really want the help, and you want to do it on your own"*.

One service document, a video on a webpage form Research Site B also contained a message from a staff member explaining that "Some students don't feel the need to register at the start as they either feel like they won't need the support, but as time goes on circumstances change and coursework can become more challenging and they often seek help then."

5.4.10 Support for students without a diagnosis

Codebook description: This theme relates to references within the staff interviews and service documents to finding different ways to provide some level of support to students without a diagnosis. It relates to Themes 2.1 and 2.2 of the study's conceptual framework.

As outlined above, some members of staff expressed concern that the diagnosis-dependent model of Disability Service funding impeded staff members' ability to support students with dyslexic-type difficulties who lacked a formal diagnosis. The next theme, *Support for students without a diagnosis*, reveals ways in which some staff are working around the boundaries of this model of service provision to provide support to these students. This theme contained 3 sub-themes as displayed in Figure 13.



Figure 13: Sub-themes under 'Finding ways to support non-diagnosed students'

Dyslexia consultation or screening service

One way in which staff reported they provide supports to non-diagnosed students is by providing a dyslexia screening or consultation service. Six (out of 10) staff members spread across all three Research Sites referred to their service providing either a dyslexia consultation or screening service of some description. In *Research Sites B and C* staff members outlined how a screening assessment is provided to students:

We would use the do it profiler... but it's not a formal diagnosis, so we try to make that clear to the student but we then would be able to follow up and link them in with... an educational psychologist themselves to get a formal report. (Learning Support Officer, Research Site B)

We provide a dyslexia screening service so, which is completely free, but unfortunately the indication from the screening is not acceptable as evidence. (Disability Officer, Research Site C)

Both of these accounts clarify that a screening cannot be used for formal registration within their services. Indeed, a webpage advertising the screening service in Research Site C made it clear to students that:

The screening will not provide you with a diagnosis. You will not be provided with supports or accommodations in Research Site C on the basis of the results of a screening alone. If you wish to pursue further testing after the screening a list of all registered psychologists can be found on the Psychological Society of Ireland website.

In Research Site A, by contrast, only a dyslexia consultation service rather than screening is provided. And, like in Research Site C, a webpage advertising the service publicly states that:

The Disability Service will provide a Dyslexia Consultation including suitable advice on external assessment for students who wish to pursue a full psycho-educational assessment from an educational psychologist, which is required in order to apply for supports and avail of supports from the Disability Service.

However, one Assistive Technology Officer from the service outlined how, actually, "a dyslexic consultation... will allow them access... just some general basic support within our service - essentially AT [assistive technology] area and exam accommodations". This suggests that the service is quietly, unofficially, providing some crucial supports to students that need them without requesting full diagnostic evidence of dyslexia.

Financial support for assessment

On top of providing either a dyslexia screening or consultation service, members of staff (7 out of 10) across all participating services also referred to providing financial support through various avenues for students who wished to pursue full psychological assessment having gone through a screening or consultation. According to a Disability Officer in Research Site C "they can get funding within Research Site C to get their full assessment if their screening service comes back positive... which is very expensive obviously... the welfare funds will fund, will support if there's a need". The meaning of the 'welfare fund' referred to in this quote is clarified by a Learning Support Officer in Research Site A, "you can apply under the Student Assistance Fund for the finance". The Student Assistance Fund (SAF) is a fund provided by the HEA to HEIs to support students in financial hardship, with institutions bearing responsibility for allocating funds to individual students based on need (HEA, 2021b). The potential use of the SAF for the purpose of funding assessment is also highlighted by two service documents across different research sites. For example, a webpage on dyslexia consultations from Research Site A stated that "Students who are advised to seek a formal assessment and who experience financial hardship, may apply to the Student Assistance Fund."

Providing some supports for students without a diagnosis

Providing dyslexia consultations, screenings and financial support for assessments therefore emerged as ways that staff were supporting students with dyslexia; ways that were concentrated on *identifying* dyslexia. A final way they reported supporting students was less concentrated on *identifying* dyslexia so much as providing *interventions* to all, regardless of diagnosis. The vast majority of staff (90%; 9 out of 10) across all of the participating services outlined different ways that their service had either made general Disability Service supports openly accessible to *all* students in their institution or provided access to some specialist individual supports to individual students without a formal diagnosis.

For example, in terms of making general Disability Service supports open to *all* students, one Learning Support Officer in Research Site A stated that "*What we are trying to do now is mainstream all of our advice by providing a Blackboard module that any student can enrol in so they have access to the same academic support and AT advice.*" Another Assistive Technology Officer in Research Site B detailed how "*I just got site licenses for, like a kind of a universal site license, for read and write gold and grammarly*" in order to provide technology solutions to all students, not just those registered with the Disability Service for dyslexia. In Research Site C, a Disability Officer similarly stated that "undiagnosed *students, we get we get a lot of that… that's why we're kind of trying to create some targeted resources that all students can access, so the workshops and all the rest of it, like you don't have to have a diagnosis in order to access any of those.*"

These examples all detail generic forms of group supports or widely accessible information or technology supports. However, one Assistive Technology Officer in Research Site B also outlined how they personally provided individual support to non-diagnosed students who needed it: "*I always help them anyway, and I would tend to give them, I would tend to have returned laptops, so I'd still give them hardware if they need it.*" Likewise, a webpage video from Research Site B advertising the Disability Service to students featured a Disability Officer speaking to camera stating that "students who may be struggling but don't necessarily have a formal diagnosis... they're very welcome to attend the service and avail of one-to-one sessions with myself... the only difference is they won't have access to funded supports".

These individual support offerings seemed to operate by not providing funded supports (such as individualised learning support) to students. However, one Disability Officer from Research Site A explained how their service went a step further: "We deliberately don't have any exclusion. I know there's a funding issue for, for students but like we have a very light touch about that... we don't turn anybody away... like I mean if you follow the model of where dyslexia is going there's going to be no documents in the future, anyway. So I don't think like there's big deal about, if somebody comes to your door they're not coming in to see us because they like us, they need something, you know, and you can just help somebody on their journey.... They get exam accommodations, they get access to AT [assistive technology], basically anything that doesn't cost us money they get so, and if they need to see one of the one-to-ones they'll get it because I always subsidise students via other students."

This example of current practice demonstrates how one HEI is actively working around the limitations of the HEA FSD funding model to provide supports based on need to students who present with dyslexic-type difficulties rather than getting bogged down worrying about formal diagnostic evidence. The quote also demonstrates an awareness of the retreating role of formal dyslexia diagnosis – *"like I mean if you follow the model of where dyslexia is going there's going to be no documents in the future, anyway"* – and a willingness to work with this shift in dyslexia practice rather than against it.

5.4.11 UDL as a positive vision for the future

Codebook description: This theme relates to references within the staff and student interviews and service documents to UDL or aspects of the UDL approach providing a positive future vision for HEIs to meet the needs of students with disabilities / dyslexia. It relates to Themes 3.2 and 3.3 of the study's conceptual framework.

The case study themes discussed thus far in this chapter indicate that many of the support practices within the current system of Disability Service provision are working well, but that staff members are also working hard to extend this current provision by removing barriers to accessing supports. Likewise, the final case study theme of 'UDL as a positive vision for the future' indicates that staff members are putting considerable work into introducing the UDL framework in their respective institutions as a means of further removing barriers to learning. This theme contained 4 sub-themes as displayed in Figure 14.



Figure 14: Sub-themes under 'UDL as a positive vision for the future'

UDL desirable

The vast majority of staff members (90%; 9 out of 10) referred to UDL in positive terms. For example, one Assistive Technology Officer in Research Site A said that *"UDL is a great principle, a great*

framework... it is getting more traction and it is picking up but... it'll take time, it's not something that just happens overnight or even within a 2 to 3-year process." Other comments too were overall positive but also picked up on the big task of UDL implementation, for example a Learning Support Officer from Research Site B: "I suppose it is a big job to kind of implement it into every single class and every single lecture, but I definitely think it would be worthwhile. Even to have that kind of awareness... for lecturers to be aware that... their class might be neurodiverse, they can actually engage them more if they use these different kind of methods."

When students were asked about what a lecturer could do to make learning easier for them, many of them also referred to strategies that would fall under general UDL guidelines, namely providing course materials in multiple formats (6 out of 12 students), providing alternative assessment options (10 out of 12 students) and providing high-quality feedback (2 out of 12 students):

Definitely think if they could record the lectures... I think... simplifying the texts, using visual aids to explain certain things. (Nursing student, Research Site C)

Within certain subjects... for instance... music industry, we were given really, really wide range... so it could have been a magazine, an essay, a podcast, a video, it could have been anything we wanted. Which was lovely. (Humanities student, Research Site B)

Give good feedback... when I speak to lecturers... I think they don't always love how pushy I am about it, but I will ask for my feedback to be three points, like to be broken down into three actionable points. There is no point telling me that I don't have beautiful sentences; what do you mean by that, what do you want from me? So if you can't tell me what will increase my grade it's not good feedback, do you know what I mean? (Humanities student, Research Site A)

Indeed, 4 (out of 12) students referred to some simple gains in these UDL-aligned teaching and learning strategies that had been made possible in the last year due to the move to online teaching imposed by the Covid-19 pandemic. For example, a Creative Arts student from Research Site B noted: *"This is what was great about college this year... when they recorded the lessons it meant I didn't have to sit in a lecture hall, and pretend I'm Rainman, and pretend I can remember everything. Because I walked out of lectures in the first two years, and it was all like that, right. Whereas now, when the videos were recorded, I went back and I watched them videos at a slow pace in me own time, and I took notes." And another Humanities student from Research Site C stated: <i>"I was pleasantly surprised by this covid year because my end of year exams... I was stressing because I thought that it was going to be, you know, this small time frame... and my performance anxiety would just garble all my points*

up, but then they ended up having to give us about two days... to do a three-hour exam and.... it almost completely alleviated all of that kind of performance anxiety."

These simple gains in teaching and learning practices due to Covid were also mentioned by 2 (out of 10) staff members. One Learning Support Officer from Research Site A observed that *"the fact that things have moved online now has really shown that alternative assessment can be really, it can be done for a lot of the courses"*. And an Assistive Technology Officer in Research Site A raised a simple the question in this regard: *"Why can't we… see this approach when go back to… normal times… why can't these principles still be embedded into a course, why can't someone again log into their module at home, why do they have to physically attend… or at least have that option… or if they wanted to do, I suppose, a module in continuous assessment instead of having a big exam at the end, why can't they be accommodated in that way?"*

UDL as a joint endeavour

While UDL was broadly seen as a desirable vision, the majority of staff members (7 out of 10) made it clear that they did not see its implementation to be the sole responsibility of the Disability Service, but rather that it should be a joint endeavour across different units within the institution:

UDL... also works towards... elderly students or foreign language students and other diverse needs kind of stuff, so it shouldn't be a kind of disability student services issue, but it is, realistically. We're the departments being tasked with kind of implementing it but we kind of can't... it has to be whole college thing. (Assistive Technology Officer, Research Site B)

When it comes to the UDL side of the scenario we definitely try to follow back in towards the [joint] projects because... I don't think it gets traction or as much traction coming from the Disability Service going to an academic. (Assistive Technology Officer, Research Site A)

Indeed, 6 (out of 10) staff from across 2 of the 3 Research Sites referred to cross-unit UDL initiatives that their institutions were already actively working on. For example, one Disability Officer from Research Site A explained that "We have an inclusive curriculum project... it's just been re-energized again via the equality, diversity and inclusion unit... There's a team of people now work in Research Site A... it hopefully will deliver it... if that all happens it'll take some of the load off us, because we are doing some of that and it just gets stuck in the disability story. UDL is a broader thing; it's not just around disability, there's a lot of other groups."

This staff role in cross-UDL projects was also supported by a service document (webpage) from Research Site C: "Research Site C Disability Service, in collaboration with Research Site C Teaching & Learning and Research Site C Equality, Diversity & Inclusion, are excited to announce The University for All Faculty Partnership Programme. This Faculty Partnership Programme is designed to support and accelerate the implementation of Universal Design for Learning (UDL) throughout the University."

These references to UDL as a joint endeavour point to the value of joint UDL initiatives between Disability Services and Teaching and Learning units, as previously captured in the US context by Behling and Linder (2017).

Lecturer buy-in required

While there was general positivity about the potential of UDL, and about joint projects to deliver it, 6 (out of 10) staff members from across all 3 Research Sites referred to the necessity for lecturer buy-in to make progress in this space. One Disability Officer in Research Site C argued that *"the barriers is the people who just aren't convinced"* while observing that *"faculty members at the moment are ready to break, I think"*, which means that *"trying to get anybody to do anything additional"* like implementing UDL is difficult. Another Disability Officer in Research Site A also picked up on this lecturer fatigue as a barrier to UDL implementation, observing that *"academics are totally overwhelmed with even just doing their own jobs, we have to do stuff for them and help them, bring them along and be their support… just continually be a resource to them"*.

One service document from Research Site C also identified lecturer reluctance as a major factor that must be considered when attempting to implement change, noting that: *"Traditionally, faculty members have had a high level of autonomy in their work... at times, this can be considered as a barrier to introducing changes in practice, in that it can be seen to infringe on that level of autonomy and academic freedom."*

The concerns regarding lecturer buy-in mirror concerns previously raised by Griful-Freixenet *et al.* (2017) and Al-Azawei, Serenelli and Lundqvist (2016) regarding staff readiness and willingness to implement UDL at HE level.

UDL complementing not removing dyslexia supports

Finally, the vast majority of staff members (9 out of 10) referred to UDL as complementing the role that Disability Services have to play in HEIs in supporting students with dyslexia rather than removing the need for Disability Service supports for this cohort. As one Disability Officer in Research Site A put

it: "Universal design at a kind of an anonymous level is never going to address an individual concern or set of anxieties that a student might have... there's always going to be a need for place or a space for people to have those concerns addressed." Another Disability Officer in Research Site C argued that: "There's always going to be some students who are going to need additional support, so I don't think... we'll ever move to a model where it's like, there's what there is and get on with it... I do think that you probably, you need a bit of both. And there will be some students who will be fine with those mainstream supports but you're always going to get students they're going to need [more support]."

This suggests a merged approach might be best where aspects of a UDL approach are paired with a more individualised support system still in existence for the smaller number of students that require it. This aligns to some extent with the theme of *Effective Disability Service supports* in which some members of staff identified only a small number of students with dyslexia requiring ongoing higher level supports.

5.4 Summary

This chapter presented an analysis of the qualitative data gathered in Phase 2 of the research project, a multi-site case study of three HEI Disability Services. A reflexive thematic analysis (Braun and Clarke, 2006, 2020) was conducted on a data set which combined 10 staff interviews, 12 student interviews and 37 service documents. Several themes were generated and related to the project's conceptual framework. These results will be interpreted in further detail in Chapter 6 alongside the results from Phase 1 of the project.

Chapter 6: Discussion

6.1 Introduction

This research study addressed the overall research question of **'What is the role of Disability Service staff in supporting students with dyslexia in Irish higher education institutions?'**. There were three research sub-questions:

- 1. How do Disability Service staff and students understand and characterise dyslexia?
- 2. How are current disability support provisions meeting the needs of students with dyslexia?
- 3. How do Disability Service staff and students view whole-campus inclusive supports and teaching and learning practices for students with dyslexia?

This chapter will present a parallel discussion of the Phase 1 and Phase 2 results (Creswell and Plano Clark, 2011) in relation to these three research sub-questions before drawing a research conclusion as to the overall role of Disability Service staff in supporting students with dyslexia. The study's conceptual framework is presented once more in Figure 15 to help guide the final discussion of the study's results.



Figure 15: Conceptual framework

6.2 Discussion

6.2.1 How do Disability Service staff and students understand and characterise dyslexia?

Characteristics of dyslexia

Relates to Conceptual Framework Theme 1.1

Staff members in Phase 1 were asked to identify the key characteristics of dyslexia from a list as specified within the seminal Report of the Task Force on Dyslexia (2001) definition of dyslexia. The most frequently selected deficits were those related to core literacy skills, with reading, spelling and writing selected by 100%, 97.5% and 93% of respondents respectively. In terms of cognitive deficits, phonological processing was selected by 86%, working memory by 79.1% and retrieving information quickly from long term memory by 60.5%. In terms of sensory deficits, visual processing was selected by 67.4% and auditory processing was selected by 55.8%. In terms of other deficits, sequencing was selected by 67.4, organisation by 65.1% and motor skills and skills automaticity were both selected by 23.3%. These findings point towards a view of dyslexia impacting on many areas of functioning, but with literacy skills being the most agreed area of difficulty across the board. This emphasis on literacy skills was supported by the findings of the staff interviews, in which 90% of staff members interviewed highlighted literacy skills as the key area of need amongst students with dyslexia. This was further supported by the document analysis, which indicated that reference to literacy difficulties as a key feature of dyslexia appeared in 4 documents that came from across all 3 research sites.

Smaller numbers of staff members interviewed emphasised cognitive skills (50%) and organisational/time management skills (30%), and these areas were only mentioned in 2 service documents respectively from across 2 separate research sites. Only 20% of staff mentioned the emotional impact of dyslexia on wellbeing or mental health, and this area of need only featured in one service document from one research site.

In combination these results point towards staff viewing dyslexia as impacting on many different areas but primarily impacting on literacy. This emphasis on literacy partially reflects the Report of the Task Force on Dyslexia (2001) definition that foregrounds literacy difficulties while also listing other areas of functioning that may be impacted. It also partially reflects the latest DSM V diagnostic criteria for 'Specific Learning Disorder in Reading' which is focused on identifying reading difficulties rather than a host of other cognitive difficulties frequently associated with dyslexia, but still facilitates the use of the term 'dyslexia' to refer to these reading difficulties (American Psychiatric Association, 2013).

By contrast, students with dyslexia in Research Phase 2 were less focused on the impact of dyslexia on their literacy skills and more focused on its impact in other areas. Only 50% of them discussed literacy difficulties when describing dyslexia and its impact on them. However, 66% emphasised cognitive difficulties, while 75% referred to time demands/organisational difficulties. Of particular note, 66% discussed the emotional impact of dyslexia on their wellbeing or mental health. This is an area of need that doesn't even feature in the Report of the Task Force on Dyslexia (2001) definition, or the Rose (2009) definition, either. It is however referred to in the DSM-5, although this is perhaps not surprising given this is a psychiatric diagnostic manual: "specific learning disorder can have negative functional consequences across the lifespan, including... high levels of psychological distress and poorer overall mental health" (American Psychiatric Association, 2013, p. 73). This finding regarding a student focus on wellbeing/mental health may reflect heightened societal awareness around mental health in recent years that is particularly prominent in the HE sector, where there are now individual student-led Mental Health Societies active across campuses nationwide (e.g. Dublin City University Clubs & Socs, 2022; Maynooth University Life Clubs & Societies, 2022).

These partially divergent views on the key characteristics of dyslexia amongst staff and student speak to the heterogeneous presentation of dyslexia (Łockiewicz, Bogdanowicz and Bogdanowicz, 2014) and also the fact that there is no agreed definition or understanding in the research or practice fields of exactly what dyslexia refers to (Caravalos *et al.*, 2012; Elliott and Grigorenko, 2014; Wagner *et al.*, 2019). They also imply that staff members may be using the dyslexia construct or label to refer to different difficulties than the students they are working with understand or perceive to be the case.

A nuanced, biopsychosocial understanding of dyslexia amongst staff

Relates to Conceptual Framework Theme 1.2

Ryder and Norwich (2019, p. 167), when discussing the results of an online survey they had circulated to 12 different UK HEIs investigating lecturers' understandings of dyslexia, state that "there appeared to be minimal support for the social model of disability as it applied to dyslexic students" and that lecturers held a "predominant erroneous perception of a categorical medical model of dyslexia in the face of the research field's acknowledgement of a more interactive one". The results of the current research project did not find the same findings amongst HE Disability Service staff; rather, these staff

members demonstrated a more nuanced understanding of dyslexia beyond the parameters of the traditional medical model.

The majority of the staff members still viewed dyslexia as a condition with neurological roots, in line with a traditional medical model view of dyslexia (MacDonald, 2019). Notably, the vast majority (86%) in Research Phase 1 indicated agreement with the statement that 'Dyslexia is caused by differences in an individual's brain functioning'. In addition, the majority of staff members interviewed referred to dyslexia described in brain-based, medicalised terms (7 out of 10) and as a lifelong condition (8 out of 10). In Research Phase 1, nearly half of participants (48.84%) also indicated disagreement with the statement that 'Environmental factors such as an individual's social-cultural background can play a role in causing dyslexia', with 18.6% unsure and only 32.56% indicating agreement.

However, even though staff were more likely to see the root causes of dyslexia as more in the brain than the environment, the vast majority in Research Phase 1 (83.72%) indicated agreement with the statement that 'Students with dyslexia are disabled not by their condition but by the lack of flexibility of their learning environment'. Furthermore, in the staff interviews a small number of participants (3 out of 10) referred to environmental factors that could change how dyslexia impacted on the individual – for example through the availability of technology tools in the learning environment. These findings in combination indicate an appreciation amongst some staff of the impact of the environment on how disabling dyslexia is or not for the individual.

More broadly, further findings in Research Phase 2 also indicate that staff are adopting support practices in line with a more social model approach to disability rather than a traditional medical model approach. The majority of staff members (9 out of 10) highlighted different ways in which they were actively removing barriers to service delivery in order to support students who lacked a formal dyslexia diagnosis. Furthermore, 90% of those interviewed spoke positively about the UDL framework and staff members from across all three research sites outlined different ways their Disability Service was actively working to implement UDL in their institution in order to remove barriers to learning for all students.

It therefore appears that participating staff members may be likely to think of dyslexia as a brainbased condition but are also cognisant of the impact of the environment on dyslexia and keen to embrace aspects of social model delivery in their day-to-day work supporting students with dyslexia. This points towards staff broadly holding a nuanced, biopsychosocial understanding of dyslexia which merges elements of both a medical and social model approach to dyslexia/disability theory and practice (Norwich, 2016; MacDonald, 2019).

A neurodiversity perspective on dyslexia

Relates to Conceptual Framework Theme 1.2

Several members of staff (50%: 5 out of 10) and, in particular, students (83.33%; 10 out of 12) in Research Phase 2 spoke about dyslexia from a neurodiversity perspective. This fore fronting of a neurodiversity perspective on dyslexia amongst students aligns with previous research amongst HE students with dyslexia which also indicated an understanding of the condition in line with a neurodiversity framework (Stampoltzis et al., 2015a; Soni, 2017; O'Byrne, Jagoe and Lawler, 2019). The repeated recurrence of the neurodiversity perspective amongst students in this study can perhaps be interpreted as a means of re-claiming a positive dyslexia identity. As Adam-Bagley (2022, p. 118) puts it, "people with dyslexia are part of the neurodiverse community, in which the negativity of the dyslexia label may be trumped by adopting a negative term with pride, just as gay people have proudly adopted the term "queer"". Given that the results of the current study also indicated that students experienced a significant emotional impact through learning and studying with dyslexia and still experienced stigma regarding the condition, this neurodiversity identity may present an opportunity to reframe their negative dyslexia experiences and therefore in turn potentially act as a protective factor against the emotional impact of learning and studying with dyslexia.

More broadly, the rise of the importance of neurodiversity as an understanding of 'disability', a personal identity and a related social movement is evident across campuses nationwide, driven by students. For example, neurodiversity societies have sprung up across HEIs in a very short space of time over just the last few years, led by strong student advocates (e.g. Dublin City University Autism & Uni, 2022; National University of Ireland Galway Societies, 2022; University College Cork Societies, 2022). In response, institutions are now also taking formal steps to acknowledge and cater for neurodiversity; for example University College Cork's Equality Diversity and Inclusion unit now hosts a training hub for staff members on neurodiversity (University College Cork, 2022) and University College Dublin recently launched a Neurodiversity movement's time has come and it seems likely that it will continue to gain further traction in future years.

Use of the dyslexia label

Relates to Conceptual Framework Theme 1.3

Elliot and Grigorenko (2014) outline a strong case for the retirement of the dyslexia diagnostic label, arguing that it is not a scientifically valid diagnosis due to the level of academic disagreement regarding its definition, causes, and method of identification, as well as its heterogeneous presentation. However, in the current study, only 20.93% of Phase 1 participants agreed or strongly agreed with the statement that 'Dyslexia cannot be considered a distinct diagnostic category'. This finding implies an acceptance of the use of the dyslexia diagnostic label amongst participants. But, at the same time, only a minority of participants (32.56%) indicated agreement with the statement that 'An individual either has dyslexia or doesn't have dyslexia', which potentially points towards a more modern conceptualisation of dyslexia in non-categorical terms. As Ryder and Norwich (2019, p. 161) put it, "there is a growing movement towards identifying an individual's learning difficulties based not on black and white categorical conditions but on dimensional classification allied to personalised provision". It may be that staff members still see dyslexia as a valid diagnosis, once it is viewed from a non-categorical perspective.

It is important to flag up, however, that for both of these items a large number of participants selected the neutral midpoint response option to indicate that they neither agreed nor disagreed with the statement. This response pattern must be interpreted carefully. The first possibility is that it may indicate some confusion overall as to the wording of the items. Alternatively, it may indicate a general confusion amongst participants as to whether dyslexia can be reliably diagnosed. And, if so, this confusion may indeed mirror the confusion on the issue that still emanates from the dyslexia research field, with an ongoing academic debate still occurring regarding the use of the dyslexia label (Snowling, 2015; Davis, 2016; Elliott, 2020) even while modern neuropsychological research studies continue to unquestioningly utilise participants formally diagnosed with dyslexia as a distinct, homogenous research cohort (Schurz *et al.*, 2015; Di Liberto *et al.*, 2018; Fiveash *et al.*, 2020). In this light, participants' mixed views on the subject are understandable. They are also in line with previous research findings amongst practitioner educational psychologists which also indicated ongoing confusion as to the use of the dyslexia label, despite these professionals being approved dyslexia assessors (Stothard, Woods and Innoue, 2018).

While the academic debate continues regarding the use and operationalisation of the dyslexia label, it is important to highlight that several students interviewed (7 out of 12) referred to benefits they

had experienced from receiving a dyslexia label. For some this was purely in terms of opening access to additional resources, while for others it was to help them better understand their learning challenges or to bolster self-esteem after they'd been through harrowing experiences struggling in the education system. These findings align with Soni's (2017) previous research findings indicating the benefits of the dyslexia label for HE students studying in the UK context.

Sub-question conclusion

This research was the first of its type to examine understandings of dyslexia amongst HE Disability Service staff, the administrative staff members who are the primary support providers for students with dyslexia, triangulated with the voices of students with dyslexia themselves in the Irish HE context. The views expressed by both groups confirmed the heterogeneous nature of the presentation of dyslexia (Łockiewicz, Bogdanowicz and Bogdanowicz, 2014), with both groups alluding to many of the different aspects of dyslexia contained in the seminal Report of the Task Force on Dyslexia (2001) definition still in use in Ireland today. However, it was interesting to note that staff emphasised the literacy difficulties associated with dyslexia while students emphasised other aspects of dyslexia, such as its impact on cognitive skills, time management / organisation and also its emotional impact, which reminds us that the construct of dyslexia lacks a broadly agreed definition (Wagner *et al.*, 2019) and so that it may mean different things to different people.

In terms of alignment with disability models, staff broadly presented a view of dyslexia in biopsychosocial terms, seeing it as having a bio-medical basis but also acknowledging the impact of the environment on its manifestation as well as frequently alluding to aspects of a more social modelstyle provision (such as implementing UDL) that they engaged with in their daily work. Some also referred to the neurodiversity perspective when discussing dyslexia. Students, too, particularly emphasised neurodiversity conceptualisations of dyslexia, including viewing dyslexia as a thinking and learning difference rather than a disability. It therefore appears that both staff and students' views of dyslexia have already moved beyond narrow medical model conceptualisations of dyslexia. This presents a challenge to the current formal system of support for students with dyslexia at HE which is still organised in a medical model format, whereby dyslexia is identified as a disability and individualised supports are provided by a 'Disability Service' on the basis of a disability diagnosis (Griful-Freixenet *et al.*, 2017; AHEAD, 2020b).

6.2.2 How are current disability support provisions meeting the needs of students with dyslexia?

Personal impact of learning and studying with dyslexia

Relates to Conceptual Framework Theme 2.1

In Research Phase 2, the impact of dyslexia on students emerged in terms of both their academic performance and their emotional wellbeing. In terms of academic performance, 8 students (out of 12) discussed the learning issues they experienced due to cognitive processing difficulties, with some accentuating the difficulty they experienced with note taking and keeping up in lectures in particular. Furthermore, the majority of students (9 out of 12) particularly emphasised the difficulty they experienced with completing work on time, confirming previous research findings amongst university students with dyslexia in which students strongly emphasised how much longer it took them to complete tasks compared to their peers (Soni, 2017; O'Byrne, Jagoe and Lawler, 2019). In terms of emotional wellbeing, the majority of students (8 out of 12) also spoke about the negative psychological impact of the condition. This aligns with previous research studies that have discovered lower academic self-efficacy beliefs (Stagg, Eaton and Sjoblom, 2018) and higher rates of depression (Nelson and Liebel, 2018) amongst students with dyslexia studying at HE level.

These findings reveal that students with dyslexia in the Irish HE system face continued personal challenges and serve to remind Disability Service staff members that, while they may be a generally lower need cohort than students with other disability conditions (for example those with autism or physical or sensory disabilities), students with dyslexia still require ongoing academic and pastoral support. On a more positive note, the majority of staff (7 out of 10) and students (10 out of 12) interviewed discussed how adopting different compensatory strategies in areas such as reading, writing, note taking and time management could help overcome some of the challenges posed by dyslexia. This finding can perhaps be tentatively related back to the biopsychosocial and neurodiversity understandings of dyslexia that emerged amongst participants, with seen as a difficulty that could be worked around in the right environment or as a different way of thinking and learning that just had to be catered for.

Core lower level supports

Relates to Conceptual Framework Theme 2.1

Research Phase 1 examined the value of different common supports provided to students with dyslexia and found that three particular forms of support were identified by staff members as being either 'very important' or 'extremely important' by a high proportion of respondents: Exam Accommodations (100% of respondents); Assistive Technology Supports (95.12%); and Permission to Record Lectures (85.71%). These areas of particularly beneficial support were triangulated by Research Phase 2, alongside one other form of support, Lecturer Liaison, which was not queried in Research Phase 1 (Figure 16). Students interviewed referred to the benefit of recorded lectures (6 out of 12 students), Assistive Technology Supports (5 out of 12) and Lecturer Liaison (4 out of 12), with these findings partially aligning with previous research in the UK context in which students also highlighted the importance of exam accommodations and assistive technology supports (Soni, 2017).

Four (out of 10) staff members interviewed also commented that that the needs of the majority of students could be met by lower level core supports (such as the aforementioned exam accommodations, assistive technology and lecturer liaison), with 4 (out of 12) students also discussing how they were happy to work away independently once these lower level supports were in place.

Overall, these findings indicate that a small handful of straightforward, lower level supports – namely exam accommodations, assistive technology, permission to record lectures, and lecturer liaison – make a big difference to students with dyslexia and may even be sufficient in and of themselves in order to meet the support needs of the majority of these students.



Figure 16: Most important form of supports triangulated across Research Phases 1 and 2

More intensive supports for some students

Relates to Conceptual Framework Theme 2.1

The findings also suggested that there will always be a small proportion of students with dyslexia who still require specialist, more labour-intensive 'higher level' individual supports such as pastoral or academic writing support. In relation to pastoral support, 80.95% of staff members who participated in Research Phase 1 indicated that they thought 'Personal/Social/Emotional Support' was either 'very important' or 'extremely important'. This was further supported by the findings of Research Phase 2, in which several staff members (6 out of 10) and students (6 out of 12) interviewed referred to the importance of students having someone that they could go to for pastoral support. Furthermore, in relation to academic writing support, 78.57% of participating staff members in Phase 1 indicated that they thought 'Additional Learning Supports/Occupational Therapy' was either very important or extremely important. This finding was again triangulated by Phase 2, in which several staff members (4 out of 12) interviewed referred to the benefit of academic writing supports, with this reference also appearing in 2 service documents.

These findings suggest that the most vital supports that meet the needs of the majority of students with dyslexia are the general lower level supports (as discussed above) but that there is still a need for more intensive individual supports in the system for a smaller number of students. This is in line with previous research amongst Irish HE students with dyslexia that revealed students' desire for a balance of broad, generic supports such as exam accommodations alongside individual person-specific supports (O'Byrne, Jagoe and Lawler, 2019). These findings may also relate to the fact that "dyslexic difficulties occur on a continuum from mild to severe" (Dyslexia Association of Ireland, 2021, par. 2). It is a possibility that students with milder dyslexic difficulties can manage with minimal supports while others with more severe dyslexic difficulties require more intensive supports. A further possibility, based on the findings regarding the emotional impact of dyslexia, is that students who have endured more negative educational experiences to date may require further ongoing support to help manage the psychological impact of these experiences on their personal and academic development.

Equity of access to support

Relates to Conceptual Framework Theme 2.2

In Research Phase 1, over three quarters of participants (76.74%) agreed or strongly agreed with the statement that 'Under the current system, students who have literacy issues but who do not have a

formal dyslexia diagnosis are excluded from receiving appropriate support'. Furthermore, a majority of respondents (54.76%) indicated agreement with the statement that 'The disability/access service should provide support for students experiencing literacy difficulties regardless of whether or not they have a diagnosis'. It is notable that staff members in I.T.s/colleges were significantly more likely to indicate agreement with this second statement. It can be theorised that this might be down to the socio-demographic mix of the student body in these institutions. HEA analyses reveal that these I.T.s typically have a higher ratio of students from disadvantaged areas to students from affluent areas, for example Letterkenny I.T. has 70 disadvantaged students for every 10 affluent students, while Trinity College only has 1.5 disadvantaged students for every 10 affluent students (O'Shea, 2020). These students from disadvantaged backgrounds might be less likely to avail of expensive private assessment or avail of the DARE scheme (Byrne *et al.*, 2014; Nic Fhlannchadha, 2018) and, as a result, staff may perceive a higher demand in these institutions for literacy support from students lacking diagnosis.

These findings from Phase 1 indicating that the majority of staff regard the current system as exclusionary and wish to broaden its reach to those lacking a diagnosis are triangulated by the results of Research Phase 2. Five (out of 10) staff members interviewed discussed the difficulties created by the diagnosis-dependent HE model of support (under which HEIs receive funding to support diagnosed students through the Fund for Student with Disabilities) and the limitations this placed on their ability to provide services to all students who require them.

Overall, it appears that many staff members view the current allocation system - which requires a dyslexia diagnosis - as unfair or unequal to those who have not undertaken a full dyslexia assessment but may present with dyslexic-type difficulties. This runs in line with Elliot and Grigorenko's (2014, p. 178) argument that the continued use of the dyslexia label "may have adverse consequences" as "the label may serve to exclude those with reading difficulties who for various reasons (social, economic, political) fail to obtain the label". It also points towards a desire amongst some staff members to adopt aspects of a more social model-type approach that is more focused on removing barriers to support rather than gating access to this support based on formal identification of a 'disability' condition.

Supporting students without a diagnosis

Relates to Conceptual Framework Theme 2.2

Further results indicated that Disability Services are already working to meet the needs of students lacking a diagnosis within the confines of the current resource allocation model. In Phase 1, the majority of staff respondents rated a number of supports for students with suspected but

undiagnosed dyslexia as either 'very important' or 'extremely important': 78% for 'Dyslexia consultation'; 70.74% for 'Dyslexia screening service'; and 60.98% for 'Full dyslexia assessment and diagnosis service'. And in Research Phase 2, staff members from across all three Research Sites referred to their Service providing either a dyslexia consultation or screening service of some description. Furthermore, staff members from across all three Research Sites also discussed how students could apply for financial support from the institution to cover the cost of a subsequent private full psycho-educational assessment, if so desired. These findings indicate that staff members are working hard to provide a means for students to avail of dyslexia consultation/screening and pursue a full psychological assessment thereafter in order to achieve a diagnosis for access to supports. Indeed, as previously highlighted in Chapter 5, in an example of notable unique practice, a Disability Officer from Research Site A (which provided dyslexia consultations rather than screenings) noted how their service actually quietly applies, to use their own words, a very "light touch" regulatory approach to the disability documentation requirement for access to supports. Instead, their service simply provides lower level supports such as exam accommodations to all students who need them without worrying about the documentation, even subsidising the cost of higher level supports for these students if required from the overall FSD funding pot.

On top of dyslexia identification services, staff members in Research Phase 2 from across every participating HEI discussed the different routes they'd already gone down to try and make some of their supports accessible to *all* students, including those without a formal diagnosis. These included running academic skills workshops that *all* students could attend (not just those registered with the Disability Service), purchasing site licences for assistive technology software packages to enable *all* students to access and use them, and housing study skills resources on a virtual learning environment page that *all* students could access.

In combination, these measures show that Disability Services are aware of the need to provide some form of support to students who lack a diagnosis and are working hard to meet their needs the best way they can. This indicates that they are actively pushing at the boundaries of the current medical model system of support and already extending it by providing some supports to all students.

Non-disclosure

Relates to Conceptual Framework Theme 2.3

Finally, the results indicate that both staff and students perceive non-disclosure as resulting from a number of different factors. In Research Phase 1, six common reasons for non-disclosure were rank ordered by respondents and emerged in the following order:

- 'They are worried about being stigmatised by lecturers or peers by registering for disability support';
- 'They want to manage their learning needs independently without registering for Disability / Access Service support';
- 3) 'They are not used to independently seeking support for their additional learning needs';
- 4) 'They don't know about the supports available';
- 'They can avail of other mainstreamed supports that meet their learning needs (e.g. Writing Centre / Study Skills service)'; and
- 6) 'They don't consider dyslexia a disability'.

Research Phase 2 provided an opportunity to tease this out in greater detail. The primary factors picked up on by both staff and students interviewed were 'Stigma' (highlighted by 7 staff and 9 students), 'Lack of awareness of supports' (highlighted by 3 staff and 11 students) and 'Strive for independence' (highlighted by 3 staff and 2 students). These factors agree with 3 of the top 4 ranked factors from Phase 1, providing a triangulation of results confirming their importance (Figure 17).

It is particularly important to note how strongly stigma emerged in the student interviews in Research Phase 2, providing a timely reminder that students with dyslexia still fear being labelled or discriminated against. This confirms recent research in the UK context indicating that students with dyslexia still experience hesitation in disclosing due to fear of stigma (Eccles *et al.*, 2018). It also places a challenge to the current medical model system of resource allocation, which obliges students to be identified or singled out for further individualised add-on supports. One can also tentatively draw a link between this experience or fear of stigma as expressed by some students in this study and the fore fronting of the neurodiversity perspective on dyslexia amongst this same group; dyslexia as a neurodiverse profile may a be particularly appealing concept to these students in order to change 'dyslexia' from being a stigmatising negative label to a positive personal identity.



Figure 17: Significant factors behind non-disclosure, triangulated across Research Phases 1 and 2

Sub-question conclusion

This research was the first of its type in the Irish HE context to examine what aspects of current disability support provision are working best for students with dyslexia in the views of both Disability Service staff and students combined. Overall, it revealed that several aspects of current Disability Service supports are arguably working well for students who can access them. In particular, it indicated that the needs of the majority of students can perhaps be met with a small number of straightforward, lower level supports: exam accommodations; assistive technology; permission to record lectures; and lecturer liaison. It also indicated that a smaller minority of students also benefit from more intensive, higher level supports in the form of pastoral support and academic learning support.

However, despite current Disability Service supports being perceived as working well for students with diagnosed dyslexia who could access them, many staff members viewed the support system as inequitable in that it denies access to resources to students experiencing dyslexic-type difficulties but lacking a formal diagnosis. Indeed, the results showed that staff are already working hard within the confines of this system to provide some level of support to these students, through dyslexia identification services or by making some aspects of service provision (such as assistive technology licences or study skills workshops) available to *all* students regardless of whether or not they have a diagnosis. These findings reveal a gap between policy and practice; policy is that the Fund for Students
with Disabilities provided by the HEA is only for students who "have a verifiable disability" (Higher Education Authority, 2020, par. 5), but HEIs on the ground are actively providing some general supports (some of which are likely funded by FSD income) to students lacking a "verifiable disability". In this light, the policy no longer seems fit for purpose, as practices on the ground have already moved ahead of it. It is also important to highlight that these practices varied between the institutions who participated in Research Phase 2 of this study. This indicates that students without formal diagnoses may receive different levels of provision in different settings and implies that a unified, national approach for this cohort of students is required.

6.2.3 How do Disability Service staff and students view whole-campus inclusive supports and teaching and learning practices for students with dyslexia?

Mainstream support services

Relates to Conceptual Framework Theme 3.1

In Research Phase 1, a small majority of staff (53%) indicated agreement with the statement that 'Mainstreamed supports like free assistive technology and Writing Centres can meet the needs of students with dyslexia without them availing of Disability / Access Service support'. By contrast, a large majority (81.4%) indicated agreement with the statement that 'Students with dyslexia have unique learning needs beyond literacy issues that require additional Disability / Access Service support'. Phase 2 offered the opportunity to tease these somewhat contradictory findings out further. From the resultant data, 6 members of staff (out of 10) and 2 students (out of 12) pointed out the shortcomings or lack of appeal of mainstream services. Several staff comments focused on low staffing levels as a reason why these services couldn't meet the higher support needs of students with dyslexia, which aligns with previous research from the US context which found that students with disabilities preferred to use mainstream supports but that they required increased provision beyond what was available to the general student body (Hong, 2015).

These Phase 2 findings indicating a lack of enthusiasm for mainstream services runs counter to previous research conducted by Newman *et al.* (2020), which tentatively indicated that students with disabilities could experience greater academic success by availing of mainstreamed services alone. It is important to note, however, that Newman *et al.'s* research took place in the United States, where mainstream services may take a different form and may be considerably more established. Writing Centres, for example, have been in existence there since the 1970s (Pittman and Hayden, 2013), while

145

in Ireland they have only emerged in earnest over the last decade (e.g. in 2015 in University College Dublin; University College Dublin, 2021). They are also typically much bigger operations in the United States: for example, the Writing Centre in Stanford University has 37 lecturers and 29 students on its tutoring team, while the Writing Centre in Dublin City University, a similar-sized Irish institution, has only 2 administrative officers and 5 student tutors (Dublin City University, 2021; Stanford University, 2021). In this light it is perhaps not surprising that the participants in Research Phase 2 did not perceive these types of mainstream services in Irish HEIs as being adequate for meeting the needs of students with dyslexia.

These overall results from Phase 1 and 2, when considered in unison, indicate that mainstream services as they currently stand are not likely to be sufficient in and of themselves to meet the needs of all students with dyslexia. However, more research is needed before any hard conclusions can be reached on this given the contradictory findings on the issue within Phase 1 of this study.

UDL positivity

Relates to Conceptual Framework Theme 3.2

In Research Phase 1, 79.06% of respondents indicated agreement with the statement that 'Redesigning all modules across a higher education institution in line with the principles of Universal Design for Learning is a realistic goal'. Triangulating this finding, 90% of staff members interviewed in Phase 2 referred to UDL in very positive terms, seeing it as both feasible and desirable, but with some accompanying comments that it will take time to implement. In addition, several students mentioned different aspects of teaching and learning that benefit their learning experience that matched key principles of the UDL framework, in particular providing course materials in multiple formats (principally by recording lectures) (6 out of 12), providing alternative assessment options (10 out of 12) and providing high-quality feedback (2 out of 12) (Figure 18). This student voice triangulated the staff members' views to point towards an embrace of UDL and a belief that it can produce positive outcomes for students, as proposed by AHEAD (Association for Higher Education Access and Disability, 2017, 2018b, 2019a).



Figure 18: Relationship of student teaching and learning recommendations to UDL framework

However, 60% of staff members from across all three Research Sites in Research Phase 2 discussed the absolute importance of lecturer buy-in for the successful implementation of UDL. They discussed how overworked lecturers already are and the demands that adopting UDL may place on already overstretched colleagues. This concern regarding lecturer overwork likely has merit, as the staff to student ratio in Irish HEIs has widened considerably since the financial recession of 2008 (from 1:16 in 2007 to 1:20 in 2017) (Houses of the Oireachtas Parliamentary Budget Office, 2019). Furthermore, it chimes with the concerns of AI-Azawei, Serenelli and Lundqvist (2016), who caution that even if lecturers buy into the idea of UDL they may not invest the time into successfully implementing it due to the high demands in this regard. It is also worth noting that since the financial recession of 2008 many academics in the Irish HE sector face precarious working conditions, with short-term contracts, low levels of remuneration and lack of job stability rife across the sector (Mercille and Murphy, 2017). These poor conditions along with rising pressures to produce high-profile research (Hodgins and Mannix-McNamara, 2021) may de-incentivise professional learning in the likes of UDL which is unlikely to help secure job tenure or contribute to research output metrics.

Supports for students with dyslexia in a UDL environment

Relates to Conceptual Framework Theme 3.2

Despite their general embrace of UDL, staff did not see it as removing the need for additional Disability Service supports for students with dyslexia. In Research Phase 1, only 32.55% of staff agreed or strongly agreed with the statement that 'Students with dyslexia would no longer need to register for additional Disability/Access Service supports if all modules were designed according to the principles of Universal Design for Learning'. And in Research Phase 2, 90% of staff interviewed were clear that they thought they would always have a role in providing support for students with dyslexia. These findings are worth consideration in relation to the official AHEAD (2017, 2018b, 2019a) proposals for the future of the Disability Service, which envisage a shrinking of individualised Disability Service supports towards just students with high needs if UDL is successfully brought in across the sector. In these AHEAD proposals, it's hard to see any future support role provided by Disability Services for the typically lower needs group of students with dyslexia (or at least the vast majority of this cohort). The current research findings indicate, however, that staff members on the ground may be reluctant to reduce their role in supporting this cohort of students.

Cross-departmental UDL initiatives

Relates to Conceptual Framework Theme 3.3

A number of key findings also emerged regarding the role of Disability Service staff in implementing UDL practices across their institutions. In Research Phase 1, staff were asked about three common Disability Service supports provided to lecturers: 'Training on implementing Universal Design for Learning'; 'Guidelines on supporting students with dyslexia'; and 'Training on supporting students with dyslexia (including general supporting students with disabilities training)'. All three options were rated as either very important or extremely important by a high number of respondents (90.25%; 95.12%; and 85.37% respectively), with 'Training on implementing Universal Design for Learning' receiving the highest mean rating. Furthermore, a majority of respondents (65.12%) indicated that they either agreed or strongly agreed with the statement 'I am confident in my ability to advise lecturers on how to practically implement Universal Design for Learning'. However, it is interesting to note that staff in universities were significantly more likely to indicate agreement with this statement than staff in I.T.s/colleges. This may be due to universities having taken the lead in this space in recent years (e.g. University College Cork, 2018; University College Dublin, 2020) and implies that we cannot assume that every HEI's Disability Service is starting out with the same level of UDL expertise across the board. Overall, though, in combination, these findings suggest that a majority of staff see UDL training as an important aspect of Disability Service provision and also see themselves as having the necessary skills to provide this type of training.

Despite this general enthusiasm for UDL, however, and positive signs regarding staff readiness to adopt a training role, staff members were less agreed upon whether they should take the lead in the

delivery of UDL. In fact, they were evenly split in their levels of agreement on the statement 'Disability/Access Service staff should take the lead in implementing Universal Design for Learning in their institution', while a majority (60.47%) indicated agreement with the statement 'Disability/Access Service staff should have better pay and conditions if they are to assume a role in implementing Universal Design for Learning in their institution'. This second finding regarding term and conditions may relate to the third space roles of Disability Service staff members lacking the terms and conditions of lecturing roles even while they involve increasingly more complex responsibilities such as implementing UDL. Research Phase 2 provided an opportunity to shed further light on these findings. And, indeed, the majority of staff members (7 out of 10) interviewed were very clear in referring to UDL as a joint effort involving multiple units across the institution, such as Teaching and Learning units or Equality, Diversity and Inclusion units, with backing from senior management. They spoke in particular about cross-departmental initiatives that were already in action that attempted to bring together these different players to provide information and training for staff on how to incorporate UDL strategies in their teaching. They also referred to the danger of UDL becoming perceived as just a disability issue if it isn't delivered through these joint initiatives. These findings align with previous research in the U.S. context by Behling and Linder (2017) which demonstrated that, despite significant challenges along the way in areas such as time, logistics, staff buy-in and ongoing funding, institutions can experience progress when they engage in joint UDL initiatives delivered by multiple units together.

Sub-question conclusion

This research was the first of its type to examine the combined impressions of Irish HE Disability Service staff and students with dyslexia on the ability of mainstream support services and the implementation of UDL principles in the sector to meet the needs of students with dyslexia. It revealed doubts amongst staff and students regarding the ability of mainstream services to meet the support needs of students, with some comments from staff cautioning about their inadequate level of resourcing to meet the higher support needs of students with dyslexia. Staff were, however, very much in favour of the introduction of UDL. They backed the use of cross-institution initiatives for this purpose, in which they would have a leading but not exclusive role, with the aim of not allowing UDL to be side-lined into becoming purely a 'disability' issue. Even with the introduction of UDL principles, however, they still expressed a need for Disability Service support for students with dyslexia.

In combination, these findings indicate a desire amongst staff to maintain specialist support for students with dyslexia who need it through the Disability Service but to extend this support with the introduction of UDL to remove barriers to learning for all.

6.3 Summary and analysis through a theoretical lens

In Chapter 2 a summary was presented of the previous literature in the field relating to the experiences of students with dyslexia at HE, as represented through the theoretical lens of the bioecological framework (Bronfenbrenner, 1977; Bronfenbrenner and Morris, 2006). This facilitated an overall bioecological analysis of the key findings. A similar approach can now also be taken in relation to the key findings that emerged from the current study along each level of the bioecological framework. The framework is represented once more in Figure 19 below and the key findings unearthed in the current study are summarised and represented through the levels of the framework in Table 24 below.



Figure 19: The bioecological framework

Table 24: A summary of the research findings through the lens of the bioecological framework

Biosystem

Dyslexia: Staff emphasise its literacy difficulty characteristics while students emphasise its cognitive characteristics and the personal/emotional impact of studying with dyslexia. Staff and students both express understandings of dyslexia beyond the parameters of the medical model; staff in biopsychosocial and neurodiversity terms and students in neurodiversity terms.

Microsystem

The HE 'classroom' context: Students endorse inclusive teaching and learning practices that align with guidelines 1,5 and 8 of the UDL framework.

Disability Service: Most students' needs are met by lower level supports (AT, exam accommodations, recording lectures, lecturer liaison) but a minority of students require higher level supports in the form of pastoral/academic support. Services are actively providing supports open to all and also providing dyslexia identification services. However, students may not be aware that Services exist or how they operate, potentially leading to non-disclosure.

Mainstream Services: Unlikely to be sufficient at present to meet the higher needs of students with dyslexia, particularly due to low staffing levels.

Mesosystem

Disability vs mainstream supports: Disability Services are signposting students towards mainstream services but lack of formal links evident.

Exosystem

Lecturing staff and UDL: Staff indicate that the ever-increasing demands on lecturing staff place a serious impediment to UDL implementation.

UDL implementation: Disability service staff members enthusiastic about UDL and their ability to play a role in implementation. Joint cross-institution projects already in place in 2 out of the 3 case study sites, involving multiple units such as Disability, Teaching and Learning Equality, Inclusion and Diversity, and are experiencing some success already.

Macrosystem

Policy: Staff allude to FSD policy forcing institutions to adopt medical model approach to running their services.

Stigma: Disability stigma raised as major factor underpinning non-disclosure.

Chronosystem

Diagnosis: Students report benefits over time of receiving the dyslexia label for both access to supports and also for self-esteem.

Transition to HE: Disconnect between systems at second level and HE raised by staff members.

The use of the bioecological framework helps illustrate the interactions and impact of various factors on the experience of students with dyslexia. Three key points regarding the interaction of factors across the different levels of the bioecological framework tentatively emerge from an analysis of this information.

Firstly, staff members indicate an awareness of how policy decisions (at the macrosystem level) impact on their practice (at the microsystem level). They alluded to the limitations the FSD places on their ability to move beyond medical model systems of support. However, at the same time, they are working at both the exosystem level to pioneer UDL approaches to meeting students' needs and also at the microsystem level to identify students with dyslexia for support and make some of their supports open to all, regardless of diagnostic status.

The second and related point is that any attempt to alter the microsystem of the HE 'classroom' (which can either ameliorate or worsen the impact of dyslexia at the biosystem level) is dependent on actions at other levels. The student voice at the HE 'classroom' microlevel tells us the benefit of inclusive teaching and learning strategies that align with specific guidelines form the UDL framework. However, for classrooms to become more inclusive, multiple actors across the HEI (e.g. Disability Service, Teaching and Learning unit, Equality, Diversity and Inclusion unit, senior academics to name a few) must work together at the exosystem level to implement the UDL framework.

Thirdly, there is an opportunity at the mesosystem level for mainstream services and Disability Services (that can be perceived as operating in currently separate microsystems) to work more in tandem. It is likely that there is minimal interaction between these different services at present and little to no linked up thinking regarding different students' individual or group needs.

6.4 Conclusion

So, to conclude, based on the results of these three research sub-questions, what broad learnings can we take regarding the role of Disability Service staff in supporting students with dyslexia? Firstly, it appears that their role is to provide individual accommodations and personal supports to students with a formal diagnosis of dyslexia, in a traditional medical model system of support. These supports were broadly well regarded and highly valued by both staff and students. Of particular note, staff play an important academic and pastoral support role for students who may have experienced a negative emotional impact from their educational journey to date studying with dyslexia. Secondly, the role of Disability Service staff also seems to be to find ways around the shortcomings of the resource allocation model they function within to provide some level of supports to students with dyslexic-type

difficulties but lacking a formal diagnosis. These supports may take the shape of dyslexia identification measures (i.e. consultations, screenings or funding for assessment) or the provision of workshops, assistive technology or digital learning tools available to all students. Thirdly, the role of Disability Service staff is to either encourage students with dyslexia to disclose their needs or to ameliorate the impact of non-disclosure by providing more accessible supports open to *all* students. Fourthly, and finally, the role of Disability Service staff seems to increasingly be as advocates for the introduction of inclusive teaching and learning strategies based on the UDL framework into the Irish HE environment, with such strategies being of benefit to students with dyslexia based on the results of this study. This role as UDL advocates even extends at times into providing training and expertise in teaching and learning strategies to academics, despite Disability Service staff being categorised as administrative rather than teaching personnel and lacking the terms, conditions, and institutional clout of their academic peers. There is a notable willingness amongst Disability Service staff to adopt this role generously, even as it places more demands on their time and moves them further from the comforts of a traditional administrative role. Disability Service staff can therefore be seen as indeed occupying complex third space roles that span traditional administrative and academic domains (Whitchurch, 2008, 2012, 2013) and appear willing to embrace the complexity of this third space role.

More broadly, Disability Service provision for students with dyslexia appears to adopt an informal approach that is centred around providing individualised support and add-on accommodations for registered students with dyslexia, in line with a traditional medical model approach, but *extends* this with more social model measures to remove barriers to learning. This is an interesting finding when considered in light of Norwich's (2016, p. 10) argument that there is a "false opposition between biological and social models of disability" and that education systems can adopt a biopsychosocial approach to synthesise medical and social models of disability identification and provision. The results of this study do indeed suggest that Disability Service staff are already going ahead and providing a version of this biopsychosocial synthesis in their everyday work. This biopsychosocial approach to service provision in turn points towards a representation of inclusion that occupies the middle ground between an "(a) inclusion interpretation based on a special education framework and knowledge and (b) inclusion as meeting the needs of all learners, irrespective of their needs" (Strnadová, Hájková and Květoňová, 2015, p. 1081) and suggests that inclusion on the ground is not as black and white as these opposing perspectives propose.

Chapter 7: Conclusions and Recommendations

7.1 Introduction

This chapter shall draw this thesis to a close by firstly stating its key contributions to knowledge. Drawing on its research findings, it will then propose a new model of support for students with dyslexic-type difficulties in the Irish HE context. From there it will state the limitations of the research and outline policy, practice, and future research recommendations from the study's findings. It will finish with a final reflection from the author on the experience of completing this research thesis.

7.2 Key contributions to knowledge

7.2.1 Understandings of dyslexia amongst HE Disability Service staff

This research study's first contribution to knowledge is in documenting understandings of dyslexia amongst Disability Service staff members. Previous international research on understandings of dyslexia amongst HE staff members has concentrated on academics (Stampoltzis *et al.*, 2015a; Ryder and Norwich, 2019; Schabmann *et al.*, 2020). The current study extends this previous knowledge base by elucidating the understandings of dyslexia held by Disability Service staff, who occupy the primary support role for students with dyslexia and through this role interact regularly with this cohort. The results revealed that these staff members highlighted literacy difficulties more than cognitive processing difficulties when characterising dyslexia, and that they broadly expressed nuanced understandings of dyslexia aligned with the biopsychosocial model of disability. Some also expressed characterisations of dyslexia from a neurodiversity perspective.

7.5.2 Understandings of dyslexia amongst students with dyslexia

This study's second contribution to knowledge is in documenting evolving understandings of dyslexia amongst students with dyslexia across multiple HEIs in an Irish HE context. Previous research studies amongst students with dyslexia have revealed that they broadly regard dyslexia as a different way of thinking and learning rather than a disability (Stampoltzis *et al.*, 2015b; Soni, 2017; O'Byrne, Jagoe and Lawler, 2019), in line with a neurodiversity perspective on dyslexia (MacDonald, 2019). However, each of the studies noted above had very small sample sizes, and only one of them, by O'Byrne, Jagoe and Lawler (2019), took place in Ireland. The current study strengthened these previous findings by employing a wider research base (12 students across 3 HEIs purposefully sampled for maximum

variance) to again indicate that students broadly conceptualised dyslexia from a neurodiversity perspective, and it is theorised that this may be as a means to forge a positive neurodiverse dyslexic identity in which the label is worn with pride rather than as a sign of disability or difficulty. This study also found that students placed less emphasis on literacy difficulties when describing dyslexia and more emphasis on dyslexia's cognitive characteristics, its impact on completing tasks in a timely manner, and the emotional impact of learning and studying with dyslexia.

7.2.3 Current supports for students with dyslexia

This study's third contribution to knowledge is in clarifying which current Disability Service supports are most valuable to students with dyslexia in the Irish HE context. The results supported Soni's (2017) and O'Byrne, Jagoe and Lawler's (2019) previous research findings amongst students with dyslexia that indicated the benefits of assistive technology, exam accommodations and individualised support. In addition, the current study added an extra dimension to these previous findings by also gathering the perspectives of staff members on the most important supports. This helped to indicate that a core of lower level supports (namely exam accommodations, assistive technology, permission to record lectures and lecturer liaison) meet the needs of the majority of students with dyslexia, while a smaller number of students require higher level individualised supports with academic writing and pastoral care.

7.2.4 Factors leading to non-disclosure

This study's fourth contribution to knowledge is in clarifying some of the factors that may lead to nondisclosure amongst students with dyslexia in an Irish HE context, again from the dual perspectives of staff and students. This adds an Irish perspective to previous international research that has explored the factors behind this phenomenon amongst students (Hong, 2015; Eccles *et al.*, 2018), while extending these previous findings by also including the voice of Disability Service staff members on this issue. In particular, this study revealed the impact of stigma, the strive for independence and a lack of awareness of disability supports on non-disclosure.

7.2.5 Supports for students without a diagnosis

This study's fifth contribution to knowledge is in identifying the myriad of ways Disability Service staff in Irish HEIs are already supporting students with dyslexic-type difficulties but without a formal diagnosis. Harkin, Doyle and McGuckin (2015) previously explored dyslexia screening practices across HEIs nationally. The current study adds to their work to provide ratings by staff of the importance of dyslexia consultations and screenings and full assessments, with the results indicating a continued value to all three identification practices as part of a Disability Service's offerings. Furthermore, the study went beyond exploring dyslexia identification practices to also document what general supports Disability Services have in place for students without a formal diagnosis to access. The findings revealed that services are already providing a mix of supports accessible to all students, such as study skills development workshops, online digital learning resources, and site-licensed assistive technology software packages.

7.2.6 Mainstream services

This project's sixth contribution to knowledge is in gathering the views of staff and students on the ability of mainstream services (such as Writing Centres or Maths Learnings Centres) to meet the support needs of students with dyslexia. This complements previous research gathered on the topic amongst students with disabilities in an international context (Hong, 2015), while also adding the perspective of staff members on the issue. The results revealed some conflicting findings, and further research will be required to clarify these, but there were certainly doubts amongst staff and students regarding the ability of mainstream services to meet the support needs of students, with inadequate levels of resourcing for these services highlighted as a particular issue of concern.

7.2.7 Most valuable UDL guidelines

This project's seventh contribution to knowledge is its identification of the most valuable UDL guidelines in terms of supporting students with dyslexia based on its series of student interviews: Guideline 1 (Provide options for perception); Guideline 5 (Provide options for expression and communication); and Guideline 8 (Provide options for sustaining effort and persistence). These findings support Griful-Freixenet *et al.'s* (2017) previous research that identified the value of UDL guidelines for students with disabilities in general, while adding additional depth to this previous work by focusing purely on the most valuable guidelines for just one specific disability cohort (students with dyslexia).

7.2.8 Joint cross-departmental initiatives to implement UDL

This project's eighth contribution to knowledge is in documenting the value of joint crossdepartmental initiatives to implement UDL in Irish HEIs. These findings support previous international research by Behling and Linder (2017) that documented the value of these joint initiatives, while showing the applicability of such initiatives in the Irish HE context.

7.2.9 The third space roles of Disability Service staff

This study's ninth contribution to knowledge is in documenting and acknowledging the third space roles of Disability Service staff. Previous research has outlined the rise of third space roles in HE settings in which staff occupy positions that span the traditional work areas of both administrative and academic staff (Whitchurch, 2008, 2012). This study adds to this research base by documenting the various roles Disability Service staff occupy across both the administrative and academic domains, from coordinating reasonable accommodations to providing pastoral care and learning support to pioneering the adoption of UDL teaching and learning practices in order to meet the needs of student with dyslexia and other disabilities.

7.2.10 The Irish HE model of inclusion

This project's final contribution to knowledge is in providing some insights into the model of inclusion in HE settings. The findings indicate that Disability Service staff provide a biopsychosocial framework of support to students with dyslexia that synthesises the provision of individualised add-on provisions for students with diagnosed dyslexia with initiatives to reduce barriers to learning for all. These findings support previous international research findings regarding the use of a synthesised model of inclusion for students with physical disabilities (Collins, Azmat and Rentschler, 2019), while extending their applicability to a different disability cohort (i.e. students with dyslexia) in the Irish context.

7.3. A proposed new model of support for students with dyslexic-type difficulties in Irish HEIs

7.3.1 The need for a new model of support

Drawing on its research findings, this study proposes a new pragmatic system of support for students with dyslexic-type difficulties in Irish HEIs. At present, students are eligible to register with Disability Services and avail of the Fund for Students with Disabilities (FSD) once they produce evidence of their dyslexia in the form of a psycho-educational assessment (AHEAD, 2020b; HEA, 2020). This is out of kilter with the support model at second level, which no longer requires a formal dyslexia diagnosis for access to additional support or exam accommodations (Department of Education and Skills, 2017b; State Examinations Commission, 2022) and it excludes students who may not have the means to avail of a dyslexia assessment. However, the HEA's most recent review of the FSD has recommended that it should be reserved primarily for students with high support needs, while those with lower needs

should be met by a "minimum level of access infrastructure" provided through the recurrent grant allocation model that HEIs receive from the HEA (HEA, 2017, p. 7). It is suggested that the proposed model of support for students with dyslexic-type difficulties presents a workable framework to provide this "minimum level of access infrastructure" to the large, typically lower need group of students with dyslexia, while simultaneously removing the need for students to pursue a full dyslexia diagnosis. Over time the model might then be adapted or modified to include other disability cohorts.

7.3.2 A pragmatic system of support for students with dyslexic-type difficulties

In order to construct a "minimum level of access infrastructure" to meet the needs of students with dyslexic-type difficulties, this study proposes a pragmatic system of support that combines simple to enact UDL innovations with enhanced, already established mainstream supports and the best of the current individual accommodations model, as drawn from the results of this research. This system of support, which can be construed as biopsychosocial in nature in its pairing of medical and social model provisions, has three strands, as displayed in Figure 20.

Accessible to any student with below average literacy attainment, in line with annual RACE standardised assessment criteria



Figure 20: A pragmatic system of support for students with dyslexic-type difficulties

Strand A: UDL-aligned innovations

Strand A is three UDL-aligned innovations drawn from the results of this research: recorded lectures (UDL Guideline 1: Provide options for perception); alternative assessments including online exams (Guideline 5: Provide options for expression and communication); and high-quality feedback (Guideline 8: Provide options for sustaining effort and persistence). During the Covid-19 lockdowns, HEIs have already demonstrated an ability to deliver two of the proposed UDL innovations (recorded lectures and alternative assessments, principally via online examinations). This model would build on these already-established UDL-aligned innovations to add just one more innovation across the sector, in the form of agreed cross-sectoral standards for high-quality feedback.

These UDL-aligned innovations would remove the requirement for several of the typical reasonable accommodations currently allocated to students with dyslexia through Disability Services. Recorded lectures would remove the common classroom accommodation of permission to record lectures. And online examinations would remove the common exam accommodation of the use of a computer and a screen reading software programme. In addition, another common exam accommodation of an extra time allowance would also become redundant if institutions chose to allocate more time to all online exams, to reduce time pressure on exams for all students.

Strand B: Enhanced mainstream provision

Strand B again draws on the research findings to identify two aspects of current Disability Service provision that could be mainstreamed on a national level; academic skills development and site licensed assistive technology. Mainstream academic skill development units are already in existence in various forms across the sector but would need to be resourced appropriately to absorb additional demand from students with dyslexic-type difficulties. Furthermore, staff members, who might reasonably expect to also assume some of the pastoral support role for students with dyslexia previously fulfilled by Disability Service staff, may benefit from professional learning on dyslexia. It is also possible that current Learning Support Officers in Disability Services could be re-deployed or partially re-deployed to mainstream units to bring their specialist knowledge and expertise to the table. Institutions would also need to move away from purchasing individual assistive technology licences for students registered with the Disability Service and instead commit funding towards purchasing site licences of relatively cheap but highly effective assistive technology packages in key areas such as text to speech and spelling and grammar correction.

Strand C: Individual accommodations

Strand C then puts in place the individual accommodations identified by staff and students in this study as the most important, and only those that have not already been addressed by Strands A and B of the model. This is effectively just exam accommodations and lecturer liaison, which are both lower level supports without a huge cost implication. In terms of exam accommodations, due to the UDL-aligned innovations already in place in Strand 1, a Disclosure of Dyslexia notification on an exam script (which examiners take into account when marking papers) would be the sole remaining common dyslexia accommodation that students would receive, thereby reducing as far as possible the need to formally register for exam supports. Furthermore, this Disclosure of Dyslexia notification could be tagged digitally against a student's student number to be taken into consideration by a lecturer when marking the exam script, removing any need for a convoluted separate exam administration for this large cohort of students. In terms of other individual accommodations, there will be occasional outliers beyond just exam accommodations and lecturer liaison – for example the small number of students requiring individual accommodations on professional placement – but these would not be significant undertakings to provide for the small numbers involved.

Most importantly, access to these individual accommodations would be available for students with below average literacy scores only, with no cognitive assessment required. This would align HEIs with the RACE system for leaving certificate examinations (State Examinations Commission, 2022) and in so doing bring the HE system of support much closer to that at second level. Students who present RACE evidence would be eligible for individual accommodations without requiring any further documentation, and students who lack RACE evidence would be provided with literacy assessment via the Disability Service. As demonstrated in previous research (Harkin, Doyle and Mc Guckin, 2015), and further revealed in Research Phase 2 of this project, services are already widely providing dyslexia screeners, often engaging in time-consuming small-scale cognitive assessments as well as literacy assessments. However, they are not necessarily allowing registration based on these screeners seeing as they are not completed by psychologists. Under the new proposed model, Disability Services would instead just conduct literacy assessments, like those administered by secondary teachers nationwide for the RACE system, broadly in line with the annual RACE standardised assessment criteria. These assessments would not be a huge undertaking in terms of time and people resources as they would not be necessary for any students with pre-existing RACE documentation, and they would only require staff to complete a short professional development course in psychometric assessment for those currently lacking it, for example the Educational Testing And Access Arrangements Certificate (Eirim Assessment Specialists, 2021).

7.3.3 Advantages of the proposed model

This proposed new model for literacy support across HEIs sidesteps the 'What is dyslexia?' and 'How do we identify it?' debates that have vexed academics and policy makers for years (Task Force on Dyslexia, 2001; Rose, 2009; Elliott and Grigorenko, 2014; Davis, 2016). Instead, it simply focuses on establishing a coherent and more inclusive system of support for all students experiencing dyslexic-type difficulties that does not require formal diagnosis of dyslexia. In so doing, it aligns itself more closely to the system at second level. This new model might also help tackle the impact of non-disclosure and the fact that some students may be losing out on useful supports due to this phenomenon. Rather than having to jump through hoops to access 'Disability' supports, as at present, students experiencing dyslexic-type difficulties could either self-navigate or be guided towards mainstream provisions at Strand 2 that might be useful to them, without ever having to disclose. The likes of online examinations through the UDL-aligned innovations at Strand 1 may also take the sting out of the examination process and reduce the need to apply for exam accommodations, thereby reducing the need for these students to ever disclose if they do not wish to. Nonetheless, they could then choose, if they wish, to pursue additional accommodations at Strand 3 if so desired.

This model may prove to be transitory in nature as a temporary interim step between the current medical model provision of support for students with diagnosed dyslexia and a potential fully realised social model provision for all students with diverse learning needs built on UDL foundations. It is important to note that AHEAD and DAWN have already proposed a new model of inclusive disability practice based on the UDL framework, as discussed in this study's literature review (Association for Higher Education Access and Disability, 2017, 2018b, 2019a). However, this model was put forth several years ago and it can be argued that it is still a long way from being viable, as, despite budding signs of progress and evident enthusiasm for UDL, it has yet to be widely adopted across the sector. This slow implementation of UDL is not unique to Irish HEIs. As Fovet (2021, p. 28) points out, UDL implementation internationally has struggled to date as it has

thus far been simplistically framed as a mere process of pedagogical adjustment, requiring few resources and very little planning. In the end, UDL implementation across campuses is in fact a new and challenging process of management of change, and it is not currently being handled as such by HE institutions.

It is argued that the proposed pragmatic, biopsychosocial system of support is an achievable improvement on the current status quo while the Irish HE sector takes time to work through a complex UDL change process to develop fully inclusive teaching and learning capacities to meet the needs of

161

all students with diverse learning needs. The proposed model may also be applicable internationally, given that the same issues with medical model provision of support for students with disabilities apply in multiple jurisdictions (Järkestig Berggren *et al.*, 2016; Higher Education Authority, 2017) and that the many states who have signed up to the UNCRPD now have obligations to demonstrate gradual progress towards more inclusive education practices (Kanter, 2019).

7.3.4 Practical considerations in implementation

It is important to note that the new support model proposed above is not presented as a fait accompli; rather it is a challenge to the conventional way of thinking in how dyslexia support should be coordinated. Implementing a major change in dyslexia support practice such as the model proposed above inevitably comes up against practical considerations that may prevent adoption of the model and it is acknowledged that these would have to be worked through. In the case of the proposed model the potential areas of difficulty relate primarily to the teaching and learning innovations in Strand 1. However, it is hoped that the model provides some flexibility for these if required. For the first innovation, recorded lectures, it is hoped that the Covid-era steps forward in this regard can be maintained. However, if this presents too big an issue for some HEIs or individual programmes, the right to record lectures for an individual with literacy difficulties could be moved to Strand 3 of the model. Therefore, any student with below average literacy attainment would gain permission through Disability Service registration to record the lecture in the same way that this permission is already granted to students with dyslexia currently registered with Disability Service.

For the second innovation, online exams, it seems likely that institutions going forward will maintain at least some level of online examinations after the Covid era, given the efficiencies they provide and the popularity amongst the student body. This model suggests that, going forward, online exams should indeed be considered the norm rather than the exception. However, if some specific subjects revert to in-person pen and paper exams these could again move to Strand 3 if required, with students with below average literacy attainments also entitled to access exam accommodations during these examinations.

For the third innovation, high quality feedback, we have reached a point in technological advances in teaching and learning where this is perhaps not as onerous a task as it may have been in the past. Lecturers can now record a video or audio feedback and upload it instantly to a virtual learning environment for direct delivery to a student's inbox. This reduces the need to meet in person or to write lengthy feedback reports. However, once again, if this is presenting significant challenges to

162

institutions to provide as standard for all students, this could be moved to Strand 3 to become an individual accommodation to students with below average literacy attainment.

However, although these teaching and learning innovations could be shifted to Strand 3 in response to practical barriers (and hence become exclusively for students with below average literacy attainment who are registered with their Disability Service), it is hoped that a more inclusive approach as suggested in the proposed model might be employed. This approach is more in line with the inclusive provision requirements of the recently ratified UNCRPD and also the stated aims of the HEA's own review of the FSD to provide a "minimum level of access infrastructure" open to students with lower need disability conditions outside of the Disability Service (HEA, 2017, p. 7).

7.4 Research limitations

7.4.1 Research Phase 1 sample size

While the number of Disability Service staff participating in the Phase 1 online questionnaire was relatively high as a proportion of the total population of these professionals nationwide (40.56%), the total number of participants itself was relatively low at 43. This sample size met the standard for a 90% confidence level with a margin of error of 10%. A 95% confidence level with a 5% margin of error would have been more statistically robust; however, with such a small total population of Disability Service staff nationwide (106) this weakening of statistical power due to a small sample size may have been inevitable.

7.4.2 Lack of student voice in Research Phase 1

Phase 1 was limited to staff only, as it would not have been possible to gain research access to the entire population of students with dyslexia in 25 HEIs nationwide. It is notoriously difficult in the sector for researchers to gain access to students registered with Disability Services, as these students are categorised as vulnerable research participants and services operate under high levels of confidentiality. Indeed, in Research Phase 2 the researcher struggled greatly to secure access to students with dyslexia in just three HEIs in order to conduct a multiple case study, with many institutions refusing access on the grounds of confidentiality, lack of time or not wishing to place any pressure on busy students to participate in research. It is likely that the researcher was only able to gain access to the three participating services due to his prior professional links to each service. Nonetheless, having a student voice within Research Phase 1 would have strengthened the research findings.

7.4.3 Lack of postgraduate student voice

This research largely focused on the experiences of undergraduate students with dyslexia. The voice of postgraduate students, who often do not sit exams or receive much in the way of individual accommodations (and as a result may have a different story regarding supports), is therefore largely missing from the study.

7.5 Research recommendations

7.5.1 Recommendations for policy

The first policy recommendation is that the HEA needs to re-consider the access infrastructure for both students with dyslexia and students experiencing dyslexic-type difficulties but lacking a formal dyslexia diagnosis. The HEA (2017, p. 7) has already conducted a review of the Fund for Students with Disabilities which concluded that it should be reserved primarily for students with high support needs, while lower needs (such as dyslexia) should be met by a "minimum level of access infrastructure". This research study proposes a new model of support for students with dyslexic-type difficulties at HE. It is suggested that this model provides both the minimum level of access infrastructure to students with dyslexia as recommended by the HEA's review and also provides a system of support to students with dyslexic-type difficulties who lack a formal diagnosis, and hence should be considered as a model of service delivery.

The second policy recommendation is that the DARE scheme criteria for students with dyslexia should be reviewed. At present, students no longer require a formal dyslexia diagnosis at second level to access supports or to access reasonable accommodations in exams (Department of Education and Skills, 2017b; State Examinations Commission, 2022). It is suggested that the DARE scheme criteria for students with dyslexia are therefore reviewed, and that the review should consider whether RACE eligibility could be carried into DARE applications to better align the systems.

The final policy recommendation is that the HEA and its constituent HEIs should consider professionalising the role of Disability Service staff members. As documented in this research study, these staff members are occupying complex third space roles in modern HEIs, but they are typically employed as administrative staff, with no set qualification standards and varying terms, conditions, and job titles across the sector. This leads to a lack of professional standing which risks undermining their role and indeed, by extension, undermining the value of disability support and inclusive

education in the HE sector. It also risks some staff members entering these positions without adequate disability or inclusive education qualifications. AHEAD and DAWN, the Disability Advisors Working Network, have already called for the professionalisation of the Disability Officer role (AHEAD, 2018b), likely concentrating on this sub-group of Disability Service staff members due to their prominence within Disability Service structures and the fact that the DAWN group is made up of Disability Officers. The current study proposes going a step further; that the roles of all staff members in Disability Services are professionalised and regularised across the sector, with set salary scales, required qualification standards and required continuous professional development. It is further recommended that set minimum staff to student ratios are put in place. The details of these aspects of professionalisation will require further consultation between staff, unions, HEIs and the HEA.

7.5.2 Recommendations for practice

Firstly, Disability Services need to consider the ways that they can address the emotional impact of learning and studying with dyslexia on students. This is of course a challenge at a time when the number of students registered for Disability Service support is constantly rising without a parallel increase in the number of staff (Association for Higher Education Access and Disability, 2020a). However, increased cognisance of this emotional impact may help staff members signpost students to counselling supports within their HEI as required. Furthermore, it might act as a reminder that they need to constantly strive to maintain a friendly human touch in their interactions with students. This is particularly important at a time when HEIs are moving more and more of their Disability Service offerings online. For example, Trinity College Dublin (2021b) has moved Disability Service registration and allocation of reasonable accommodations to an online platform that removes some of the traditional interpersonal interface associated with this process. In such a system, some students with comparatively low support needs (such as those with dyslexia) may seldom or even never interface with staff members directly. Services may wish to consider how they can balance the time and resource efficiencies of online processes such as these with the pastoral benefits of in-person transactions with students.

Secondly, even if this study's proposed new pragmatic model of support is not adopted, Disability Services should further consider ways in which they can make their support available to as many students with dyslexic-type difficulties as possible even if they are not formally registered with the Service. The participating services in Phase 2 of this research study demonstrated that this is possible through careful use of resources to establish some supports accessible to all students regardless of diagnosis, for example by opening study skills workshops to *all* students to attend and purchasing site

165

licences for assistive technology packages instead of individual licences for students registered with the Disability Service.

Thirdly, Disability Services should consider ways they can tackle lack of awareness of service offerings amongst students with dyslexia, which might be contributing to the phenomenon of non-disclosure. Student Ambassadors, social media campaigns and signposting through the Students' Union might all be considered as avenues to pursue to help build awareness of the Disability Service amongst the student body.

7.5.3 Recommendations for future research

Firstly, future research might address how lecturers in Irish HEIs understand and characterise dyslexia. While the current study addressed this issue amongst Disability Service staff and students with dyslexia, further research amongst lecturing staff in the Irish context would help clarify similarities and differences in understandings amongst these three groups and also enable comparison with previous research amongst lecturers in the wider European context (Stampoltzis *et al.*, 2015a; Ryder and Norwich, 2019; Schabmann *et al.*, 2020).

Secondly, further research might attempt to quantify the phenomenon of non-disclosure amongst students with dyslexia as well as other students with different categories of disability. Newman and Madaus's (2015) research from the United States demonstrated a means of doing this by tracking students from second level into HE; an ambitious project in the Irish context might attempt something similar to help quantify and understand this phenomenon.

Thirdly, future research might focus on the benefits of mainstream services versus disability-specific services for students with dyslexia. In the United States, Newman *et al.'s* (2020) study demonstrated a method for doing so which tracked students with disabilities from second level through to HE and analysed the retention of those who accessed mainstream services only versus those who also (or only) accessed Disability Services. A similar study in the Irish context might be helpful to provide some insights into the value of mainstream versus disability-specific supports. A study of this nature might also attempt to quantify the proportion of students with dyslexia registered with Disability Services who also avail of mainstream supports, in order to help better understand students' pattern of usage across these different models of service provision.

Finally, future research might build on the current study to examine the role of Disability Service staff in supporting students with mental health difficulties. After students with dyslexia (and other specific learning difficulties), students with mental health difficulties constitute the largest and fastest growing disability cohort in Irish HEIs, constituting 16% of all students registered for support nationwide (Association for Higher Education Access and Disability, 2020a). Like students with dyslexic-type difficulties, students with mental health difficulties also present a challenge to a medical model system of diagnosis for support. Many of them may never receive a formal mental health diagnosis, let alone even access specialist psychiatric care in an Irish mental health system that is severely underresourced compared to other Western European countries (Baker, 2022) and has long waiting lists for access to child and adolescent services (Mental Health Reform, 2021). Future research into the role of Disability Service staff in supporting students with mental health difficulties might help outline further support options for this cohort that do not depend upon formal psychiatric diagnosis for access to support.

7.6 Reflexive account and final comment

7.6.1 Reflexive account

Reflexivity "is the concept that researchers should acknowledge and disclose their selves in their research, seeking to understand their part in it, or influence on it" (Darwin Holmes, 2020, p. 2). In Chapter 1 of this thesis I outlined my own career history in the HE sector, my personal professional rationale for completing this research, and how my professional experience had influenced my thinking particularly regarding dyslexia, the relationship between Disability and mainstream supports, and UDL. Throughout the research study I endeavoured to keep check on my own personal thinking on these subjects as the results emerged. In particular, I endeavoured to let the student voice rise to the fore unencumbered as I was conscious that my views as a professional in the system with no personal experience of disability or learning difficulty might be very different to theirs as students with dyslexia. To this end I made a reflective journal entry after each student (and staff) interview which became memos in my NVIVO data set to help with my analytical process when coding and interpreting the interview data. I also engaged with my research supervisors regularly to help challenge my thinking on the research study as it developed. This was invaluable to me in helping me to take a step back from my own professional experiences and 'make sense' of what was emerging from the research.

Engaging in this research changed my thinking on these issues in several ways. Firstly, I saw that the dyslexia label was personally meaningful to many of the students I had interviewed. These students were likely not aware of the hotly debated controversies regarding dyslexia assessment in the research field but, then again, this really wasn't important to them. I saw that the label had helped some of them make sense of their learning struggles and helped boost their self-esteem. In this light, there is

an argument to be made for retaining this diagnostic category despite the issues with it. I also saw that staff members were not hung up on the intricacies of whether a student's undiagnosed difficulties with literacy equalled dyslexia or not; rather, they were more concerned with providing access to supports for these students where possible to help them thrive in the HE environment. These learnings in turn influenced my proposed new model of support for students with dyslexic-type difficulties, which still enables students with a formal diagnosis to register with the Disability Service and does not try to move totally away from reference to dyslexia. However, crucially, it also opens this access to other students with literacy difficulties who lack a formal psychological diagnosis and tries to ensure that all students (diagnosed or not) can access as many useful supports as easily as possible without presenting barriers.

Secondly, I saw that Disability Services do not doubt the ability of mainstream support services or the staff members within them, but that they do raise legitimate concerns regarding their capacity given their typically low staffing levels. This helped re-frame my own thinking towards not worrying about how to get Disability Services to value mainstream supports (and vice versa) so much as to figuring out how the expertise and the existing staff in Disability Services could contribute to help overcome mainstream services' personnel issues and also aid communication between these units. As a result, my proposed new model of support suggests moving some Disability Service staff members in learning support roles at least part time into mainstream services.

Finally, undertaking the research both confirmed my hesitations about UDL but also revealed a way that the framework could potentially be usefully employed. The participating staff members showed considerable enthusiasm for UDL but also voiced concerns about how it could be implemented given the demands it places on already overworked lecturing staff and the need for whole institution buyin. This confirmed some of my own thinking on the reasons why we haven't got all that far yet down the road of UDL implementation. But the students in their series of interviews revealed that a small handful of teaching and learning innovations could help meet their support needs – namely recorded lectures, alternative assessments principally in the form of online exams, and high-quality feedback. These innovations are perhaps not exclusive to the UDL framework, but they do align with guidelines 1, 5 and 8 of the framework. Therefore, I could see when pulling together my proposed new model of support that the UDL framework could still be harnessed to help bring about beneficial changes to inclusive teaching practices, but that we don't have to wait to implement an entire UDL revolution.

Overall, I am glad to have had my thinking challenged continuously throughout this project and I hope that I emerge as a better researcher and practitioner at the end of this research cycle as a result. I further hope that the research findings and recommendations demonstrate a careful consideration of my own positionality in relation to these key issues and an attempt to be open to thinking differently about the issues in response to the emerging research results.

7.6.2 Final comment

When I commenced this research project I was feeling somewhat jaded professionally. After five years of hard graft in the competitive Irish HE sector across three HEIs on zero hour and temporary fixed term contracts I'd finally managed to secure a permanent contract in a young and expanding university. However, at this point in my career I was left distinctly unimpressed by the reluctance across all of the institutions I had worked in to embrace more radical solutions to inclusive education for students with disabilities, and, in particular, those with dyslexia. Undertaking this project was an attempt in my own career contribution to get off the side lines and do something about it, to capture where Disability Services were at in terms of their understandings of dyslexia, their role in supporting students with dyslexia, and their role in promoting UDL principles in the HE sector, with a hope to finding practical recommendations for practice and policy that would benefit the sector.

Completing this project helped refresh my enthusiasm for my work and provide me with a new mindset on the day-to-day work of Disability Services. I saw how the energy of staff in Disability Services has been consumed in recent years with just keeping the show on the road; from 2012 to 2019 there was a 97% increase in the number of students registered with Disability Services nationwide and a 37% increase in the number of students per Disability Service staff member (AHEAD, 2020a). In this light, the relatively slow moves towards mainstreaming support services and introducing inclusive teaching and learning strategies that I have witnessed in my career to date are understandable. Indeed, this research demonstrated the commitment of Disability Service staff to meeting the needs of their ever-expanding student body while also engaging in complex cross-departmental initiatives to try to drive the adoption of UDL principles in their respective HEIs. This re-emphasised to me that Disability Service staff members in the sector are certainly not resting on their laurels and are attempting to drive forward more inclusive practices across their institutions while also continuing to deliver high quality services to students.

I hope that my proposed new model of support for students with dyslexic-type difficulties, derived from the results of this research, is given due consideration by policy makers and individual institutions as a pragmatic way to provide more inclusive supports to a wider range of students than those captured under the narrow parameters of the current resource allocation model, while still retaining the elements of best practice built up in the sector to date.

169

On a personal level, conducting this Doctorate project has not led me to a new career direction (as is sometimes the case with Doctoral students wishing to step into academia or related fields). Rather, it has re-invigorated my desire to 'make a difference' in my own day to day work. As I move forward with the next stage of my career, I hope that I can play some small part in delivering a more equitable, more inclusive (in the sense of meeting the needs of *all* learners) education experience for students with diverse additional needs.

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Appendix A: Literature review search strands

Database search process

Four databases were selected to provide a cross-discipline base for a topic that straddles psychology and education. Two databases were selected for psychology and education respectively; PsychINFO and PsycArticles for psychology; and Education Research Complete and Academic Search Complete for education. These databases were chosen based on their recommendation in the DCU Psychology and Education library subject guides (Campbell, 2020; Lehane, 2020) as well as the researcher's previous positive experience in using them.

Database search strings (i.e. combinations of words with boolean operators) covering the topics of dyslexia, widening participation and higher education disability service provision were developed and trialed through pilot searches before the final search strings were decided upon (Mengist, Soromessa and Legese, 2020). The final searches were conducted on specific terms in the 'all fields' range, narrowed by type of publication (academic journals), peer-reviewed, journal articles only, language (English) and year of publication (2015-20). The final search strategy returned 929 articles. These were then narrowed down using a four-step process; identification, screening, eligibility and final included papers (adapted from Mengist, Soromessa and Legese, 2020). This resulted in 39 final articles included in the review.

The database search returned the results detailed in Table 1 below.

Table 1: Database search results

Search terms*	Psyci	info	Education Research Complete		Psycł	Psycharticles Academic Search Complete		Total	
	No.	Date	No.	Date	No.	Date	No.	Date	
"Understandings"	3	13/4/20	4	17/4/20	0	18/4/20	3	18/4/20	10
"dyslexia"									
Theories of dyslexia	49	13/4/20	22	17/4/20	0	18/4/20	35	18/4/20	106
"Dyslexia awareness"	1	13/4/20	2	17/4/20	0	18/4/20	0	18/4/20	3
Dyslexia understandings	33	13/4/20	17	29/4/20	0	18/4/20	23	18/4/20	73
Definition of dyslexia	8	13/4/20	7	17/4/20	0	18/4/20	7	18/4/20	22
"Dyslexia" "higher education"	4	17/4/20	8	17/4/20	0	18/4/20	6	18/4/20	18
Dyslexia at university	43	17/4/20	32	17/4/20	0	18/4/20	31	5/4/20	106
Dyslexia assessment	28	4/5/20	13	27/4/20	1	27/4/20	16	27/4/20	58
"university" "students with disabilities" NOT "intellectual disability"	16	22/4/20	31	22/4/20	1	22/4/20	37	4/5/20	85
widening participation AND disability	2	24/4/20	16	24/4/20	0	24/4/20	8	24/4/20	26
widening participation AND Ireland	4	24/4/20	62	24/4/20	0	24/4/20	38	24/4/20	104
"Higher education" "disability"	33	17/4/20	67	17/4/20	3	18/4/20	48	18/4/20	151
third space professionals AND higher education	1	5/5/20	5	5/5/20	0	5/5/20	4	5/5/20	10
dyslexia AND university AND assistive technology	7	6/5/20	7	6/5/20	0	6/5/20	11	6/5/20	25
dyslexia AND writing center or writing lab or writing studio	1	7/5/20	1	7/5/20	0	7/5/20	1	7/5/20	3
universal design for learning AND higher education	5	7/5/20	31	7/5/20	0	7/5/20	16	7/5/20	52
universal design for learning AND effectiveness	4	7/5/20	15	7/5/20	0	7/5/20	8	7/5/20	27
universal design for learning AND barriers	7	7/5/20	25	7/5/20	0	7/5/20	18	7/5/20	50
Total	249		365		5		310		929

* Using all fields. Narrowing: Academic journals / Peer-reviewed / Journal Articles / English language / 2015-2020.

The 929 articles identified were screened for eligibility using the process outlined in Figure 1 below.



Figure 1: Flow diagram for database search eligibility screening (based on Mengist, Soromessa and Legese, 2020, p. 7)

Library catalogue search process

The DCU library digital catalogue was searched for key terms, narrowed by type of publication (book), format (e-book) and year of publication (2015-20). The final search strategy and number of books returned (235) is available to view in Table 2. A five-step filtering process was applied (adapted from Mengist, Soromessa and Legese, 2020). This five-step procedure was utilised instead of the four-step approach used in the database results filtering process due to the nature of the DCU library online

catalogue search and edit capacities which made it difficult to remove duplicated results in large searches. Therefore, catalogue entries were screened for eligibility during each individual search, to create eligible search lists for export to Zotero reference management software. Duplicates were then removed in Zotero and a further round of exclusions was performed to create a final list of included texts. This resulted in 3 final books included in the review. The process is available to view in Figure 2.

Table 2: Library cata	logue search results
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Search Term	No. of Findings	Date
Special educational needs	195	2/5/20
Dyslexia	23	2/5/20
Widening participation	17	2/5/20
Total	235	

Dyslexia: 23 Special educational needs: 195 Widening participation: 17 Domain: all fields search Identification •Approach: thematic •n= 235 Excluded 212 Domain: Title and Summary Reading Eligibility •Approach: relevance to research questions •n= 23 Excluded 2 Domain: Title Screening Approach: duplication •n= 21 Domain: Main body skim reading Eligibility • Approach: relevance to research questions •n= 21 Excluded 18 Books included in final review ncluded •n= 3

The 235 results were screened for eligibility using the process outlined in Figure 2 below.

Figure 2: Flow diagram for library catalogue search (based on Mengist, Soromessa and Legese, 2020, p. 7)

Policy documents and reports search

National and international policy documents and governmental and public body reports were searched from 1993 onwards. The year 1993 was selected as of particular importance due to the publication during that year of Report of the Special Education Review Committee (SERC), which kick-started the move to inclusive education in the Irish context (McDonnell, 2000; Griffin and Shevlin, 2007). This resulted in 13 documents included in the final review. A full list in order of year of publication is available to view in Table 3.

Table 3: Policy Documents / articles of legislation / governmental and public body reports &publications reviewed by year of publication

Document	Source/Year of Publication	Scope
Report of the Task Force on Dyslexia	Task Force on Dyslexia (2001)	National
An evaluation of the HEAR and DARE supplementary	Byrne <i>et al.</i> (2014)	National
admission routes to higher education		
National Plan for Equity of Access to Higher Education	HEA (2015)	National
Position paper: a roadmap for disability support in	AHEAD (2017)	National
higher education in Ireland		
Circular no 0013/2017	Department of Education and Skills (2017)	National
Circular no 0014/2017	Department of Education and Skills (2017)	National
The role of the disability officer and disability service	AHEAD (2018)	National
in higher education in Ireland: a vision for future		
development		
Progress Review of the National Access Plan and	HEA (2018)	National
Priorities to 2021		
DARE HEAR Facts and Figures Report 2017-2018	Nic Fhlanncadha (2018)	National
Summary		
Inclusive learning and the provision of reasonable	AHEAD (2019a)	National
accommodations to students with disabilities in		
higher education in Ireland		
Numbers of students with disabilities studying in	AHEAD (2019b)	National
higher education in Ireland 2017/18		
Students with Disabilities Engaged with Support	AHEAD (2020)	National
Services in Higher Education in Ireland 2018/19		
Reasonable accommodations at the 2022 certificate	State examinations commission (2022)	National
examinations		

Websites search

The websites of relevant governmental bodies, higher education institutions and special interest groups were reviewed. This resulted in 20 websites included in the final review. A full list is available to view in Table 4.

Table 4: Websites of special interest groups, government bodies and higher education institutions reviewed

Organisation	Website homepage
Association for Higher Education and Disability	https://www.ahead.ie/
Access College	https://accesscollege.ie/
Athlone Institute of Technology	https://www.ait.ie/
Australian Federation of SPELD Associations	https://uldforparents.com/
British Dyslexia Association	https://www.bdadyslexia.org.uk/
Centre for Applied Special Technology	http://www.cast.org/
Dublin City University	https://www.dcu.ie/
Dyslexia Association of Ireland	https://www.dyslexia.ie/
Higher Education Authority	https://hea.ie/
Institute of Art Design and Technology	https://www.iadt.ie/
International Dyslexia Association	https://dyslexiaida.org/
Irish Universities Association	https://www.iua.ie/
Mary Immaculate College	https://www.mic.ul.ie/
National Council for Special Education	https://ncse.ie/
Technological University Dublin	https://tudublin.ie/
The Children's Clinic	http://thechildrensclinic.ie/
Trinity College Dublin	https://www.tcd.ie/
University College Cork	https://www.ucc.ie/en/
University College Dublin	https://www.ucd.ie/
University of Limerick	https://www.ul.ie/

Backward snowballing

In the current review, backward snowballing [i.e. "finding citations within a paper" (Van Wee and Banister, 2016, p. 284] was utilised when the researcher needed more information on a topic that was not revealed through the other information gathering processes. For example, the researcher needed more information on modern HE professionals working across the traditional academic and administrative divide, so he backward snowballed from Moran and Misra's (2018) article on the topic to Whitchurch's (2008) seminal paper that highlighted the growth of these professionals in the sector.

Backward snowballing resulted in 17 additional sources being included in the final review. The type of snowballed sources included are displayed in Table 5 below.

Table 5: Snowballed sources

Journal article	Book	Report/publication	Website	Total
10	5	2	1	17

Recommended readings

A short list of recommended readings in the research field was compiled. This resulted in a further 6 journal articles and 1 research report being included in the review.

Combined sources

The total number of articles, books, reports / publications and websites that formed the basis of the literature review are broken down in Figure 3 below. The total number of combined sources was 98.



Figure 3: Literature review combined sources

Appendix B: Phase 1 online questionnaire

Section 1: Background information

What type of Higher Education Institution are you currently employed in?

University (including Technological University)	
Institute of Technology	
College	

What is the nature of your current disability support position?

Head of Service	
Disability Officer	
Learning Support Officer	
Occupational Therapist	
Psychologist	
Assistive Technology Officer	
Inclusive Learning lead	
Careers advisor	
Other	

If 'other' selected... What is the nature of your current role?

How many years' experience do you have working in a Disability / Access Service in a higher education setting

What qualifications do you hold? e.g. "Honours Degree Psychology, Masters Degree Disability Studies"

Have you ever undertaken specialist professional learning/training in dyslexia?

Yes	
No	

If 'yes' selected... Please describe the type of professional learning/training and level of qualification e.g. 'one day awareness training, non-accredited' or 'covered as part of Masters in Special Educational Needs (Level 9)'

Section 2: Understandings of dyslexia

What areas of difficulty do you consider to be the key characteristics of dyslexia? Dyslexia is characterised by difficulties in (please select all that apply)... (Conceptual framework theme 1.1.)

Reading	
Spelling	
Writing	
Phonological processing (i.e. in self-awareness of the structure of sounds within a language)	
Working memory, which hold chunks of information while it is being worked on	
Quickly retrieving information from long term memory	
Learning basic skills in any area to an automatic level	
Organisation	
Sequencing (i.e. knowing the sequence of different things in order like numbers or letters or months of the year)	
Motor skills	
Visual processing	
Auditory processing	

Please indicate how much you disagree or agree with the following statements:

Conceptual framework	Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
T 1.2	Dyslexia is caused by differences in an individual's brain functioning					
T 1.2	Environmental factors such as an individual's socio-cultural background can play a role in causing dyslexia					
T 1.2	Students with dyslexia are disabled not by their condition but by the lack of flexibility of the learning environment they find themselves within					
T 1.3	An individual either has dyslexia or doesn't have dyslexia					
T 1.3	'Dyslexia' cannot be considered a distinct diagnostic category					

Section 3: Dyslexia supports

For students with dyslexia, how important do you think the following Disability/Access Service supports are? (Conceptual framework theme 2.1)

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Exam accommodations					
Assignment accommodations					
Permission to record lectures					
Personal / social / emotional support					
Additional learning supports / occupational therapy					
Assistive technology supports					

For lecturers, how important do you think the following Disability/Access Service supports are

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Guidelines on supporting students with dyslexia					
Training on supporting students with dyslexia (including general supporting students with disabilities training)					
Training on implementing universal design for learning					

regarding students with dyslexia? (Conceptual framework theme 2.1)

For students with suspected but undiagnosed dyslexia, how important do you think the following

Disability/Access Service supports are? (Conceptual framework theme 2.1)

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Dyslexia consultation					
Dyslexia screening service					
Full dyslexia assessment and diagnosis service					

Section 4: Accessing supports

Please rank how common, in your opinion, the following reasons are for students with dyslexia choosing NOT to register for disability support from 1 (most common) to 6 (least common) (Conceptual framework theme 2.3)

	1	2	3	4	5	6
They are not used to independently seeking support for their additional learning needs						
They are worried about being stigmatised by lecturers or peers by registering for disability support						
They want to manage their learning needs independently without registering for disability support						
They don't know about the supports available						
They don't consider dyslexia a disability						
They can avail of other mainstreamed supports that meet their learning needs (e.g. Writing Centre / Study Skills service)						

Please indicate how much you disagree or agree with the following statements:

Conceptual framework	ltem	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
T 2.2	Under the current system, students who have literacy issues but who do not have a formal dyslexia diagnosis are excluded from receiving appropriate support					
T 2.2	The Disability/Access Service should provide support for all students experiencing literacy difficulties regardless of whether or not they have a dyslexia diagnosis					
Т 3.1	Mainstreamed supports like free assistive technology and Writing Centres can meet the needs of students with dyslexia without them availing of Disability/Access Service support					
T 3.1	Students with dyslexia have unique learning needs beyond literacy issues that require additional Disability/Access Service support					

Section 5: Universal Design for Learning

Please indicate how much you disagree or agree with the following statements:

Conceptual framework theme	Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Т 3.2	Students with dyslexia would no longer need to register for additional Disability/Access Service supports if all modules were designed according to the principles of Universal Design for Learning					
T 3.2	Re-designing all modules across a higher education institution in line with the principles of Universal Design for Learning is a realistic goal					
т 3.3	Disability/Access service staff should take the lead in implementing Universal Design for Learning in their institution					
т 3.3	I am confident in my ability to advise lecturers on how to practically implement Universal Design for Learning					
Т 3.3	Disability/Access Service staff should have better pay and conditions if they are to assume a role in implementing Universal Design for Learning in their institution					

Appendix C: Phase 1 plain language statement

This research project is titled 'The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study'. It is being undertaken by Cillian Murphy to fulfil the course requirements of a Doctor of Education programme in Dublin City University (DCU). The research is under the supervision of Dr. Fiona King, Dr. Ellen Reynor and Dr. Sinead Andrews in the School of Inclusive and Special Education.

This research will provide Disability Service staff with a voice to influence Higher Education dyslexia policy and practice and also identify further professional learning needs regarding dyslexia for staff in the sector. The project has two elements; an online questionnaire circulated to Disability Service staff working in Higher Education Institutions nationwide and a series of case studies with a small number of Disability Services. This statement relates to the first element: the online questionnaire.

The online questionnaire will be self-administered. It takes approximately 10-15 minutes to complete and responses will be anonymous. Participants will indicate their consent to participate in the research in a preliminary section of the questionnaire and will be unable to access the questionnaire until they have done so. The results will be stored in a password-protected folder on DCU's cloud storage system until the completion of the project and destroyed thereafter. Participating in the research is voluntary. A questionnaire participant can withdraw their participation at any time, simply by not completing the questionnaire. However, if the questionnaire has been submitted the data will be anonymous and unidentifiable in the wider data set and will still be processed as part of the project.

Personal data of a non-sensitive nature will be collected from participants and processed as part of this research project.

- The Data Controller is the principal researcher, Cillian Murphy (<u>cillian.murphy369@mail.dcu.ie</u>) from the School of Inclusive and Special Education, DCU Institute of Education, under the supervision of Dr. Fiona King (fiona.king@dcu.ie), Dr. Ellen Reynor (ellen.reynor@dcu.ie) and Dr. Sinead Andrews (<u>sinead.andrews@dcu.ie</u>).
- The third party data processor utilised to complete the research is Qualtrics.
- The DCU Data Protection Officer is Mr. Martin Ward (data.protection@dcu.ie / Ph: 7005118 / 7008257).
- The personal data will be processed for research purposes only.
- The categories of personal data concerned are: anonymous online survey dataset.
- Qualtrics is the data processor, used to provide a simple online platform to submit anonymous questionnaire responses. The Qualtrics privacy statement is available to view at <u>https://www.qualtrics.com/privacy-statement/</u>.

- Data will be retained until the completion of the project and destroyed immediately thereafter, to a maximum period of 3 years.
- Any participant has the right to lodge a complaint with the Irish Data Protection Commission; <u>https://www.dataprotection.ie/en/contact/how-contact-us</u>.
- Individuals' have the right to access their own personal data by contacting the data Protection Unit (data.protection@dcu.ie).
- A questionnaire participant can withdraw their participation at any time (simply by not submitting their questionnaire response) and no further data will be collected. However, if the questionnaire has been submitted the data will be anonymous and unidentifiable in the wider data set and will still be processed as part of the project.
- Personal data will be used in an anonymised at a later date for the purpose of publication of the results of the research.

While every effort will be made to protect the confidentiality of participants in the study, confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

Further queries on this research project can be addressed to the principal researcher, Cillian Murphy, at <u>cillian.murphy369@mail.dcu.ie</u>. Likewise, if participants wish to be sent a summary of the research findings at the end of the project they can request this by emailing Cillian Murphy at the same address.

Queries or issues can also be addressed to the supervisors of the project; Dr. Fiona King (fiona.king@dcu.ie); Dr. Ellen Reynor (ellen.reynor@dcu.ie); and Dr. Sinead Andrews (sinead.andrews@dcu.ie). If participants have concerns about this study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail rec@dcu.ie.

Appendix D: Phase 1 online informed consent form

Research Study Title

This research project is titled '*The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study*'. It is being undertaken by Cillian Murphy to fulfil the course requirements for a Doctorate in Education in Dublin City University under the supervision of Dr. Fiona King, Dr. Ellen Reynor and Dr. Sinead Andrews.

The purpose of the research

The purpose of this research is to explore how Irish higher education Disability Service staff understand and define dyslexia, how they view their role in supporting students with dyslexia and how they perceive their role in implementing inclusive supports to meet the needs of students with dyslexia. Personal data will be used in an anonymised form at a later date for the purpose of publication of the results of the research.

Consent

Yes
Yes
Yes
Yes
Yes

Appendix E: Phase 2 staff interview schedule

Demographics

What is the nature of your current role?

How many years' experience do you have in Higher Education Disability support?

Interview

- 1. Why don't you start by telling me a little about your career path and what has led you to working in a Disability Service?
- 2. How would you describe dyslexia? (Conceptual framework theme 1.1 / 1.2/1.3)
 - a. In your experience, what are its key characteristics?
 - b. What do you think causes dyslexia?
 - c. Is 'dyslexia' something that people have for life?
- 3. Can you give me examples of how you support students with dyslexia in your current role? (Conceptual framework theme 2.1)
 - a. Can you give me examples of some of the most important supports your service provides to students with dyslexia?
 - b. In your experience do reasonable accommodations work well for students with dyslexia?
- 4. From your experience, why would some students with dyslexia choose not to disclose their needs to avail of Disability/Access Service support? (Conceptual framework theme 2.3)
 - a. What barriers to registration exist?
 - b. What do you see as your role in supporting these students?
- 5. In your opinion, are some students with literacy issues excluded from support under the current disability support system in your setting? (Conceptual framework theme T 2.2)
 - a. For example, students without the means to avail of an assessment
 - b. In your opinion, what is your role in supporting these students?
- In your experience, can mainstreamed learning supports like free-for-all assistive technology and Writing Centres meet the additional support needs of students with dyslexia without them needing to avail of Disability/Access Service support? (Conceptual framework theme T 3.1)
 - a. In your experience, do students with dyslexia in your institution avail of supports like these?
 - b. Could you see yourself assuming a role in a mainstreamed learning support service?

- 7. Through your work, are you familiar with the universal design for learning framework? (Conceptual framework theme T 3.2)
 - a. What is your understanding of it/what does it aim to do?
 - b. In your opinion, would it be feasible to introduce it across your entire institution?
 - c. What would be the barriers to this?
- 8. What role, if any, do Disability/Access Service staff in your institution have to play in delivering universal design for learning? (Conceptual framework theme T 3.3)
 - a. Do they have a role in providing staff training?
 - b. Would you be willing to assume a (greater) role in implementing UDL in your institution?
- 9. If universal design for learning was implemented across your institution, do you think that students with dyslexia would still need to use the Disability / Access Service? (Conceptual framework theme T 3.3)
 - a. What for?
 - b. What implications would this have for your role?

10. Would you like to add any final thoughts or comments about what we've discussed today?

Appendix F: Phase 2 student interview schedule

Demographics

What is your date of birth?

Are you an undergraduate or postgraduate?

What degree course are you studying?

What year of the course are you in?

Interview

- 1. As a student with dyslexia, can you tell me about your journey to college / university?
 - a. Did you enter via the DARE scheme?
 - b. How did you find the transition into college / university?
 - c. How do you find college / university now that you are here?
- 2. How would you describe dyslexia? (Conceptual framework theme 1.1, 1.2, 1.3)
 - a. In your experience, what are its key characteristics?
 - b. Is 'dyslexia' something that people have for life?
- What are the core challenges you face in managing your learning at college / university? (Conceptual framework theme T 2.1 / 3.1 / 3.2)
 - a. How do they compare to the challenges you experienced in secondary school / further education/working life?
- 4. What supports from the Disability Service do you find most useful in meeting your learning needs? (Conceptual framework theme 2.1)
 - a. Like exam accommodations (such as additional time or typing on a laptop), learning support, assistive technology, letting your lecturers know your needs?
 - b. Is the interpersonal support important or is it mainly important to receive the likes of exam accommodations or permission to record lectures?
 - c. Are the most useful supports different now during covid than what they were beforehand?

- 5. Why do you think some students with dyslexia don't register with the Disability Service? (Conceptual framework theme 2.3)
 - a. Is there a fear of being regarded differently by either peers or lecturers?
 - b. Do you think that students know how to access supports if they want them?
- 6. What other formal supports in the college/university outside of the Disability Service help you manage your learning? (Conceptual framework theme 3.1)
 - a. Like a study skills centre or writing centre or maths support centre?
- 7. What can a lecturer do to make learning easier for you? (Conceptual framework theme 3.2)
 - a. What types of assessments best allow you to demonstrate your knowledge and abilities?
 - b. Do you ever have an option to choose your type of assessment?
- What else could the Disability/Access Service do to support you in your learning? (Conceptual framework theme 2.1 / 3.3)
 - a. Could they set up more informal social/personal supports like peer mentoring or coffee mornings?
 - b. Or more formal supports like meeting you with your lecturers to communicate your needs?
- 9. Would you like to add any final thoughts or comments about what we've discussed today?

Appendix G: Phase 2 plain language statement (for Heads of Service)

This research project is titled 'The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study'. It is being undertaken by Cillian Murphy to fulfil the course requirements of a Doctor of Education programme in Dublin City University (DCU). The research is under the supervision of Dr Fiona King, Dr Ellen Reynor and Dr Sinead Andrews in the School of Inclusive and Special Education.

This research will provide Disability Service staff with a voice to influence Higher Education dyslexia policy and practice and also identify further professional learning needs regarding dyslexia for staff in the sector. The project has two elements; an online questionnaire circulated to Disability Service staff working in Higher Education Institutions nationwide and a series of case studies with a small number of Disability Services. This statement relates to the second element: case studies with a small number of Disability/Access Services. The case studies involve four strands of data collection: 1) interviews with 3-5 members of your Disability Service team; 2) interviews with 3-5 students with dyslexia; 3) analysis of service policies and website; and 4) completion of a short service checklist.

Personal data of a non-sensitive nature will be collected from participants and processed as part of this research project.

- The Data Controller is the principal researcher, Cillian Murphy (cillian.murphy369@mail.dcu.ie) from the School of Inclusive and Special Education, DCU Institute of Education, under the supervision of Dr Fiona King (fiona.king@dcu.ie), Dr Ellen Reynor (ellen.reynor@dcu.ie) and Dr Sinead Andrews (sinead.andrews@dcu.ie).
- The third party data processor utilised to complete the research is Zoom video-call software.
- The DCU Data Protection Officer is Mr. Martin Ward (data.protection@dcu.ie / Ph: 7005118 / 7008257).
- The personal data will be processed for research purposes only.
- The categories of personal data concerned are: research participant consent form; interview audio recordings; and de-identified interview transcripts.
- Zoom is the data processor for the online interviews, used as it is an online encrypted videocall platform that enables the researcher and interviewee to connect securely for an online interview from different locations. The Zoom privacy statement is available to view at <u>https://zoom.us/privacy</u>.
- Data will be retained until the completion of the project and destroyed immediately thereafter, to a maximum period of 3 years.
- Any participant has the right to lodge a complaint with the Irish Data Protection Commission; <u>https://www.dataprotection.ie/en/contact/how-contact-us</u>.
- Individuals' have the right to access their own personal data by contacting the Data Protection Unit (data.protection@dcu.ie).

- An interview participant may withdraw their participation in the study at any time prior to publication of the final research report by emailing Cillian Murphy (cillian.murphy369@mail.dcu.ie) and their data will be deleted.
- Personal data will be used in an anonymised/pseudonymised form with all potential identifiers removed at a later date for the purpose of publication of the results of the research.

The interviews will take place over Zoom via an encrypted video call and will be digitally recorded via Zoom and two back-up digital devices and the data will be auto-transcribed through the Zoom platform and edited for corrections by the researcher. Identifying markers will be removed from the data transcription and the transcription will be utilised anonymously in the research project. While every attempt will be made to de-identify the interview transcripts, due to the small size of the population of Disability Service staff working in Irish HEIs full privacy/anonymity cannot be guaranteed for this group. The original digital recording files will be deleted from the Zoom platform and the backup digital devices after the auto-transcription process is complete and stored in a password-protected folder on DCU's cloud storage system alongside the resulting data transcriptions until the completion of the project and destroyed thereafter. Participating in the research is voluntary. An interview participant may withdraw their participation in the study at any time prior to publication of the final research report and their data will be deleted. While every effort will be made to protect the confidentiality of participants in the study, confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

Further queries on this research project can be addressed to the principal researcher, Cillian Murphy, at cillian.murphy369@mail.dcu.ie. Likewise, if participants wish to be sent a summary of the research findings at the end of the project they can request this by emailing Cillian Murphy at the same address. Queries or issues can also be addressed to the supervisors of the project; Dr Fiona King (fiona.king@dcu.ie); Dr Ellen Reynor (ellen.reynor@dcu.ie); and Dr Sinead Andrews (sinead.andrews@dcu.ie). If participants have concerns about this study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail rec@dcu.ie.

Appendix H: Phase 2 online informed consent form (for Heads of Service)

This research project is titled 'The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study'. It is being undertaken by Cillian Murphy to fulfil the course requirements for a Doctorate in Education in Dublin City University (DCU) under the supervision of Dr. Fiona King, Dr. Ellen Reynor and Dr. Sinead Andrews. The project has two elements; an online questionnaire circulated to Disability/Access Service staff working in Higher Education Institutions nationwide and a series of case studies with a small number of Disability/Access Services. This form relates to the second element: case studies with a small number of Disability/Access Services. The case studies involve four strands of data collection: 1) interviews with 3-5 members of your Disability Service team; 2) interviews with 3-5 students with dyslexia; 3) analysis of service policies and website; and 4) completion of a short service checklist.

Personal data of a non-sensitive nature will be collected from participants (both staff members and students) and processed as part of this research project.

- The Data Controller is the principal researcher, Cillian Murphy (cillian.murphy369@mail.dcu.ie) from the School of Inclusive and Special Education, DCU Institute of Education, under the supervision of Dr. Fiona King (fiona.king@dcu.ie), Dr. Ellen Reynor (ellen.reynor@dcu.ie) and Dr. Sinead Andrews (sinead.andrews@dcu.ie).
- A third party data processor, Zoom video-call software, will be utilised to complete the research.
- The DCU Data Protection Officer is Mr. Martin Ward (data.protection@dcu.ie / Ph: 7005118 / 7008257).
- The personal data will be processed for research purposes only.
- Data will be retained until the completion of the project and destroyed immediately thereafter, to a maximum of 3 years.
- Personal data will be used in an anonymised / pseudonymised form with all potential identifiers removed at a later date for the purpose of publication of the results of the research.

Case study participation will involve staff members and students with dyslexia undertaking semistructured interviews that will last approximately 30-40 minutes. This will take place over Zoom video conferencing software via an encrypted video call and will be digitally recorded via Zoom and two back-up digital devices and the data will be auto-transcribed through the Zoom platform and edited for transcription errors by the researcher. Identifying markers will be removed from the data transcription and the transcription will be pseudonymised / anonymised in the research project. While every attempt will be made to de-identify the interview transcripts, due to the small size of the population of Disability Service staff working in Irish HEIs full privacy/anonymity cannot be guaranteed. The original digital recording files will be deleted from the Zoom platform and back-up recording devices after the auto-transcription process is complete and will be stored in a password-protected folder on DCU's cloud storage system alongside the resulting data transcriptions until the completion of the project (to a maximum of 3 years) and destroyed thereafter. In addition, the case service checklist will be completed by the Head of Service or nominated other and will also be stored on DCU's password-protected cloud storage system.

<u>To provide your consent to participate in this research, please read each of the statements below and</u> select 'Yes' if you agree.

I understand that Cillian Murphy is the data controller	Yes
I have read the Plain Language Statement (or had it read to me)	Yes
I understand the information provided	Yes
I understand the information provided in relation to data protection	Yes
I have had an opportunity to ask questions and discuss this study	Yes
I have received satisfactory answers to all my questions	Yes
I am aware that interviews will be audiotaped and auto-transcribed	
via the Zoom platform	Yes
I am aware that participants' personal data will be utilised in anonymised /	
pseudonymised form for the purpose of publication of the results of the research	Yes

Participation is voluntary and a participant may withdraw their participation in the study at any time prior to publication of the final research report by emailing Cillian Murphy (cillian.murphy369@mail.dcu.ie) and their data will be deleted.

While every effort will be made to protect the confidentiality of participants in the study, confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

I have read and understood the information in this form. My questions and concerns have been answered by the researcher and I have a copy of this consent form. Therefore, I provide consent for Disability/Access Service unit to take part in this research project.

I provide consent for the Disability/Access Service unit to participate in this research study.

Name:

Job title:

Institution:

Date:

Appendix I: Online case study service checklist

Name of institution: _____

Dyslexia figures (please complete as far as possible with available data)

Number of students with disabilities	
Number of students with dyslexia	
Number of students with dyslexia male	
Number of students with dyslexia female	
Number of students with dyslexia undergraduate	
Number of students with dyslexia postgraduate	

Which of these supports your Disability / Access Service provides for students with dyslexia?

First year orientation programme	
Exam accommodations	
Assignment accommodations	
Permission to record lectures	
Personal / social / emotional support	
Additional learning supports / occupational therapy supports	
Assistive technology supports	
Careers guidance	
Other (please specify)	

Which of these supports your Disability / Access Service provides *for lecturers* regarding students with dyslexia?

Advise on how to support individual students	
Guidelines to faculty on supporting students with dyslexia	
Training to faculty on supporting students with dyslexia (including general supporting	
students with disabilities training)	
Training to faculty on implementing universal design for learning	
Other (please specify)	

Which of these supports your Disability / Access Service provides for *students with suspected but undiagnosed* dyslexia?

Dyslexia consultation	
Dyslexia screening service	
Full dyslexia assessment and diagnosis service	
Other (please specify)	

Do you have any data on the most commonly awarded reasonable accommodations for students with dyslexia?

e.g. out of x students with dyslexia, x receive 10 minutes more per hour in exams, x have permission to record lectures etc

Does your service provide a dyslexia sticker or equivalent indicator for exams?

Yes	
No	

If so, are there any cut-off points in terms of standardised scores or level of study for students to be

eligible for this?

Does your service provide a dyslexia sticker or equivalent indicator for assignments?

Yes	
No	

If so, are there any cut-off points in terms of standardised scores or level of study for students to be eligible for this?

Does your service provide any general assistive technology packages to all students with dyslexia? E.g. Grammarly Premium / Text Help Read & Write Gold.

Does your service formally liaise with other mainstreamed services (e.g. Writing Centre / Student Learning unit) to support students with dyslexia? If so, how?

Please use this textbox to provide any further comments on your general service provision for students with dyslexia.

Appendix J: Phase 2 plain language statement (for individual staff members)

This research project is titled 'The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study'. It is being undertaken by Cillian Murphy to fulfil the course requirements of a Doctor of Education programme in Dublin City University (DCU). The research is under the supervision of Dr Fiona King, Dr Ellen Reynor and Dr Sinead Andrews in the School of Inclusive and Special Education.

This research will provide Disability Service staff with a voice to influence Higher Education dyslexia policy and practice and also identify further professional learning needs regarding dyslexia for staff in the sector. The project has two elements; an online questionnaire circulated to Disability Service staff working in Higher Education Institutions nationwide and a series of case studies with a small number of Disability Services. This statement relates to the second element: interviews with Disability/Access Service staff members completed as part of the case study.

Personal data of a non-sensitive nature will be collected from participants and processed as part of this research project.

- The Data Controller is the principal researcher, Cillian Murphy (cillian.murphy369@mail.dcu.ie) from the School of Inclusive and Special Education, DCU Institute of Education, under the supervision of Dr Fiona King (fiona.king@dcu.ie), Dr Ellen Reynor (ellen.reynor@dcu.ie) and Dr Sinead Andrews (sinead.andrews@dcu.ie).
- The third party data processor utilised to complete the research is Zoom video-call software.
- The DCU Data Protection Officer is Mr. Martin Ward (data.protection@dcu.ie / Ph: 7005118 / 7008257).
- The personal data will be processed for research purposes only.
- The categories of personal data concerned are: research participant consent form; interview audio recordings; and de-identified interview transcripts.
- Zoom is the data processor for the online interviews, used as it is an online encrypted videocall platform that enables the researcher and interviewee to connect securely for an online interview from different locations. The Zoom privacy statement is available to view at <u>https://zoom.us/privacy</u>.
- Data will be retained until the completion of the project and destroyed immediately thereafter, to a maximum period of 3 years.
- Any participant has the right to lodge a complaint with the Irish Data Protection Commission; <u>https://www.dataprotection.ie/en/contact/how-contact-us</u>.
- Individuals' have the right to access their own personal data by contacting the Data Protection Unit (data.protection@dcu.ie).

- An interview participant may withdraw their participation in the study at any time prior to publication of the final research report by emailing Cillian Murphy (cillian.murphy369@mail.dcu.ie) and their data will be deleted.
- Personal data will be used in an anonymised/pseudonymised form with all potential identifiers removed at a later date for the purpose of publication of the results of the research.

The interviews will take place over Zoom via an encrypted video call and will be digitally recorded via Zoom and two back-up digital devices and the data will be auto-transcribed through the Zoom platform and edited for corrections by the researcher. Identifying markers will be removed from the data transcription and the transcription will be utilised anonymously in the research project. While every attempt will be made to de-identify the interview transcripts, due to the small size of the population of Disability Service staff working in Irish HEIS full privacy/anonymity cannot be guaranteed. The original digital recording files will be deleted from the Zoom platform and the back-up digital devices after the auto-transcription process is complete and stored in a password-protected folder on DCU's cloud storage system alongside the resulting data transcriptions until the completion of the project and destroyed thereafter. Participating in the research is voluntary. An interview participant may withdraw their participation in the study at any time prior to publication of the final research report and their data will be deleted.

While every effort will be made to protect the confidentiality of participants in the study, confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

Further queries on this research project can be addressed to the principal researcher, Cillian Murphy, at cillian.murphy369@mail.dcu.ie. Likewise, if participants wish to be sent a summary of the research findings at the end of the project they can request this by emailing Cillian Murphy at the same address.

Queries or issues can also be addressed to the supervisors of the project; Dr Fiona King (fiona.king@dcu.ie); Dr Ellen Reynor (ellen.reynor@dcu.ie); and Dr Sinead Andrews (sinead.andrews@dcu.ie). If participants have concerns about this study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail rec@dcu.ie.

Appendix K: Phase 2 online informed consent form (for individual staff

members)

This research project is titled 'The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study'. It is being undertaken by Cillian Murphy to fulfil the course requirements for a Doctorate in Education in Dublin City University (DCU) under the supervision of Dr. Fiona King, Dr. Ellen Reynor and Dr. Sinead Andrews.

Personal data of a non-sensitive nature will be collected from participants and processed as part of this research project.

- The Data Controller is the principal researcher, Cillian Murphy (cillian.murphy369@mail.dcu.ie) from the School of Inclusive and Special Education, DCU Institute of Education, under the supervision of Dr. Fiona King (fiona.king@dcu.ie), Dr. Ellen Reynor (ellen.reynor@dcu.ie) and Dr. Sinead Andrews (sinead.andrews@dcu.ie).
- A third party data processor, Zoom video-call software, will be utilised to complete the research.
- The DCU Data Protection Officer is Mr. Martin Ward (data.protection@dcu.ie / Ph: 7005118 / 7008257).
- The personal data will be processed for research purposes only.
- Data will be retained until the completion of the project and destroyed immediately thereafter, to a maximum of 3 years.
- Personal data will be used in an anonymised / pseudonymised form with all potential identifiers removed at a later date for the purpose of publication of the results of the research.

Participation will involve undertaking a semi-structured interview that will last approximately 30-40 minutes. This will take place over Zoom video conferencing software via an encrypted video call and will be digitally recorded via Zoom and two back-up digital devices and the data will be auto-transcribed through the Zoom platform and edited for transcription errors by the researcher. Identifying markers will be removed from the data transcription and the transcription will be pseudonymised / anonymised in the research project. While every attempt will be made to de-identify the interview transcripts, due to the small size of the population of Disability Service staff working in Irish HEIs full privacy/anonymity cannot be guaranteed. The original digital recording files will be deleted from the Zoom platform and back-up recording devices after the auto-transcription process is complete and will be stored in a password-protected folder on DCU's cloud storage system alongside the resulting data transcriptions until the completion of the project (to a maximum of 3 years) and destroyed thereafter.

To provide your consent to participate in this research, please read each of the statements below and select 'Yes' if you agree.

I understand that Cillian Murphy is the data controller	Yes
I have read the Plain Language Statement (or had it read to me)	Yes
I understand the information provided	Yes
I understand the information provided in relation to data protection	Yes
I have had an opportunity to ask questions and discuss this study	Yes
I have received satisfactory answers to all my questions	Yes
I am aware that my interview will be audiotaped and auto-transcribed via the	
Zoom platform	Yes
I am aware that my personal data will be utilised in anonymised /	
pseudonymised form for the purpose of publication of the results of the research	Yes

Participation is voluntary and a participant may withdraw their participation in the study at any time prior to publication of the final research report by emailing Cillian Murphy (cillian.murphy369@mail.dcu.ie) and their data will be deleted.

While every effort will be made to protect the confidentiality of participants in the study, confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

I have read and understood the information in this form. My questions and concerns have been answered by the researcher and I have a copy of this consent form. Therefore, I consent to take part in this research project.

I consent to take part in this research study.

Name:

Date:
Appendix L: Phase 2 plain language statement (for individual students)

This research project is titled 'The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study'. It is being undertaken by Cillian Murphy to fulfil the course requirements of a Doctor of Education programme in Dublin City University (DCU). The research is under the supervision of Dr Fiona King, Dr Ellen Reynor and Dr Sinead Andrews in the School of Inclusive and Special Education.

This research aims to influence Higher Education dyslexia policy and practice and also identify further professional learning needs regarding dyslexia for staff in the sector. The project has two elements; an online questionnaire circulated to Disability/Access Service staff working in Higher Education Institutions nationwide and a series of case studies with a small number of Disability/Access Services. This statement relates to the second element: interviews completed with students registered with the Disability/Access Service as part of the case study.

Personal data of a non-sensitive nature will be collected from participants and processed as part of this research project.

- The Data Controller is the principal researcher, Cillian Murphy (cillian.murphy369@mail.dcu.ie) from the School of Inclusive and Special Education, DCU Institute of Education, under the supervision of Dr Fiona King (fiona.king@dcu.ie), Dr Ellen Reynor (ellen.reynor@dcu.ie) and Dr Sinead Andrews (sinead.andrews@dcu.ie).
- The third party data processor utilised to complete the research is Zoom video-call software.
- The DCU Data Protection Officer is Mr. Martin Ward (data.protection@dcu.ie / Ph: 7005118 / 7008257).
- The personal data will be processed for research purposes only.
- The categories of personal data concerned are: research participant consent form; interview audio recordings; and de-identified interview transcripts.
- Zoom is the data processor for the online interviews, used as it is an online encrypted videocall platform that enables the researcher and interviewee to connect securely for an online interview from different locations. The Zoom privacy statement is available to view at https://zoom.us/privacy.
- Data will be retained until the completion of the project and destroyed immediately thereafter, to a maximum period of 3 years.
- Any participant has the right to lodge a complaint with the Irish Data Protection Commission; <u>https://www.dataprotection.ie/en/contact/how-contact-us</u>.
- Individuals' have the right to access their own personal data by contacting the Data Protection Unit (data.protection@dcu.ie).
- An interview participant may withdraw their participation in the study at any time prior to publication of the final research report by emailing Cillian Murphy (cillian.murphy369@mail.dcu.ie) and their data will be deleted.
- Personal data will be used in an anonymised/pseudonymised form with all potential identifiers removed at a later date for the purpose of publication of the results of the research.

The interviews will take place over Zoom via an encrypted video call and will be digitally recorded via Zoom and two back-up digital devices and the data will be auto-transcribed through the Zoom platform and edited for corrections by the researcher. Identifying markers will be removed from the data transcription and the transcription will be pseudonymised/anonymised in the research project. The original digital recording files will be deleted from the Zoom platform and the back-up digital devices after the auto-transcription process is complete and stored in a password-protected folder on DCU's cloud storage system alongside the resulting data transcriptions until the completion of the project and destroyed thereafter. Participating in the research is voluntary. An interview participant may withdraw their participation in the study at any time prior to publication of the final research report and their data will be deleted.

While every effort will be made to protect the confidentiality of participants in the study, confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

Should students experience any adverse effects from participation in the project they can contact the research team or the DCU research ethics committee through the details provided below. In addition, they can contact their institution's Disability/Access Service and/or Student Support Services and/or Counselling Service for further support.

Further queries on this research project can be addressed to the principal researcher, Cillian Murphy, at <u>cillian.murphy369@mail.dcu.ie</u>. Likewise, if participants wish to be sent a summary of the research findings at the end of the project they can request this by emailing Cillian Murphy at the same address.

Queries or issues can also be addressed to the supervisors of the project; Dr Fiona King (fiona.king@dcu.ie); Dr Ellen Reynor (ellen.reynor@dcu.ie); and Dr Sinead Andrews (sinead.andrews@dcu.ie). If participants have concerns about this study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail rec@dcu.ie.

32

Appendix M: Phase 2 online informed consent form (for individual students)

This research project is titled 'The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study'. It is being undertaken by Cillian Murphy to fulfil the course requirements for a Doctorate in Education in Dublin City University (DCU) under the supervision of Dr. Fiona King, Dr. Ellen Reynor and Dr. Sinead Andrews.

Personal data of a non-sensitive nature will be collected from participants and processed as part of this research project.

- The Data Controller is the principal researcher, Cillian Murphy (cillian.murphy369@mail.dcu.ie) from the School of Inclusive and Special Education, DCU Institute of Education, under the supervision of Dr Fiona King (fiona.king@dcu.ie), Dr Ellen Reynor (ellen.reynor@dcu.ie) and Dr Sinead Andrews (sinead.andrews@dcu.ie).
- A third party data processor, Zoom video-call software, will be utilised to complete the research.
- The DCU Data Protection Officer is Mr. Martin Ward (data.protection@dcu.ie / Ph: 7005118 / 7008257).
- The personal data will be processed for research purposes only.
- Data will be retained until the completion of the project and destroyed immediately thereafter, to a maximum of 3 years.
- Personal data will be used in an anonymised/pseudonymised form with all potential identifiers removed at a later date for the purpose of publication of the results of the research.

Participation will involve undertaking a semi-structured interview that will last approximately 30-40 minutes. This will take place over Zoom video conferencing software via an encrypted video call and will be digitally recorded via Zoom and two back-up digital devices and the data will be auto-transcribed through the Zoom platform and edited for transcription errors by the researcher. Identifying markers will be removed from the data transcription and the transcription will be pseudonymised / anonymised in the research project. The original digital recording files will be deleted from the Zoom platform and the back-up recording devices after the auto-transcription process is complete and will be stored in a password-protected folder on DCU's cloud storage system alongside the resulting data transcriptions until the completion of the project (to a maximum of 3 years) and destroyed thereafter.

<u>To provide your consent to participate in this research, please read each of the statements below and</u> <u>select 'Yes' if you agree.</u>

I understand that Cillian Murphy is the data controller	Yes
I have read the Plain Language Statement (or had it read to me)	Yes
I understand the information provided	Yes

I understand the information provided in relation to data protection	Yes
I have had an opportunity to ask questions and discuss this study	Yes
I have received satisfactory answers to all my questions	Yes
I am aware that my interview will be audiotaped and auto-transcribed via	
the Zoom platform	Yes
I am aware that my personal data will be utilised in anonymised /	
pseudonymised form for the purpose of publication of the results of the research	Yes

Participation is voluntary and a participant may withdraw their participation in the study at any time prior to publication of the final research report by emailing Cillian Murphy (cillian.murphy369@mail.dcu.ie) and their data will be deleted.

While every effort will be made to protect the confidentiality of participants in the study, confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

I have read and understood the information in this form. My questions and concerns have been answered by the researcher and I have a copy of this consent form. Therefore, I consent to take part in this research project.

I consent to take part in this research study.

Name:

Date:

Appendix N: Phase 2 debriefing notice for staff

Research project: The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study.

- Thank you for participating in an interview as part of this research project. You may withdraw your participation in this project at any time prior to publication of the research report by emailing the principal researcher at cillian.murphy369@mail.dcu.ie.
- If you wish to be informed of the study's outcomes please email the principal researcher with this request (cillian.murphy369@mail.dcu.ie).
- If you experience any adverse effects from participation in this study or have any further questions or queries regarding the research project, the processing and/or storage of personal data or any other issue related to the project you can contact the principal researcher, his supervisors or the DCU ethics committee at the contact details listed below.

Research Team

Principal researcher: Cillian Murphy (cillian.murphy369@mail.dcu.ie)

Research supervisors: Dr Fiona King (fiona.king@dcu.ie), Dr Ellen Reynor (ellen.reynor@dcu.ie) and Dr Sinead Andrews (sinead.andrews@dcu.ie)

DCU Ethics Committee

The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail <u>rec@dcu.ie</u>.

Appendix O: Phase 2 debriefing notice for students

Research project: The role of Irish Higher Education Disability Service staff in supporting students with dyslexia: a mixed methods study.

- Thank you for participating in an interview as part of this research project. You may withdraw your participation in this project at any time prior to publication of the research report by emailing the principal researcher at cillian.murphy369@mail.dcu.ie.
- If you wish to be informed of the study's outcomes, please email the principal researcher with this request (cillian.murphy369@mail.dcu.ie).
- If you experience any adverse effects from participation in this study or have any further questions or queries regarding the research project, the processing and/or storage of personal data or any other issue related to the project you can contact the principal researcher, his supervisors or the DCU ethics committee at the contact details listed below.

Research Team

Principal researcher: Cillian Murphy (cillian.murphy369@mail.dcu.ie)

Research supervisors: Dr Fiona King (fiona.king@dcu.ie), Dr Ellen Reynor (ellen.reynor@dcu.ie) and Dr Sinead Andrews (sinead.andrews@dcu.ie)

DCU Ethics Committee

The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail rec@dcu.ie.

You can also contact your institution's Disability Service and/or Counselling Service for further support at the details provided below.

Disability Service Contact Details

Email: Phone:

Counselling Service Contact Details

Email: Phone:

Out of hours support click here.

Appendix P: Ethical approval



37

www.dcu.ie

Appendix Q: Phase 1 questionnaire SPSS codebook

Variable information

Variable	Label	Measurement	Role
		Level	
Plainlanguage	I have read the Plain Language Statement (or had	Nominal	None
	it read to me)		
Understand_info	I understand the information provided	Nominal	None
Opportunity_ask	I have had the opportunity	Nominal	None
	to ask questions and discuss this study		
Data_protection	I understand the information provided in relation	Nominal	None
	to data protection		
Satisfactory_ans	I have received	Nominal	None
	satisfactory answers to all my questions		
Withdraw	I understand I may withdraw	Nominal	None
	from the research at any point		
Confidentiality	I have read and understood the arrangements to	Nominal	None
	be made to protect confidentiality of data,		
	including that confidential information provided is		
	subject to legal limitations		
Consent	I consent to participate in	Nominal	None
	this research study		
Publication	I am aware that my personal data will be utilised	Nominal	None
	in anonymised form for the purpose of		
	publication of the results of		
	the research		
ТуреНЕІ	What type of Higher Education Institution are you	Nominal	None
	currently employed in?		
Position	What is the nature of your current disability	Nominal	None
	support position?		
Role	What is the nature of your current role?	Nominal	None

Experience	How many years' experience do you have working	Nominal	None
	in a Disability / Access Service in a higher		
	education setting?		
Qualifications	What qualifications do you hold? e.g. "Honours	Nominal	None
	Degree Psychology, Masters Degree Disability		
	Studies"		
dyslexia_training	Have you ever undertaken specialist professional	Nominal	None
	learning / training in dyslexia?		
typetraining	Please describe the type of professional learning /	Nominal	None
	training and level of qualification e.g. "one day		
	dyslexia awareness training, non-accredited" or		
	"covered as part of Masters in Special Educational		
	Needs (Level 9)"		
reading	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Reading		
spelling	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Spelling		
writing	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Writing		
Phonological	What areas of difficulty do you consider to be the	Nominal	None
_processing	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Phonological processing		
	(i.e. in self-awareness of the structure of sounds		
	within a languageF		
working_memory	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		

	Dyslexia is characterised by difficulties in (please		
	select all that apply) Working memory, which		
	hold chunks of information while it is being		
	worked on		
quickly_retrieving_	What areas of difficulty do you consider to be the	Nominal	None
info_from_LTM	key characteristics of dyslexia? Dyslexia is		
	characterised by difficulties in (please select all		
	that apply) Quickly retrieving information from		
	long term memory		
skills_automaticity	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia? Dyslexia is		
	characterised by difficulties in (please select all		
	that apply) Learning basic skills in any area to an		
	automatic level		
organisation	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Organisation		
sequencing	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Sequencing (i.e. knowing		
	the sequence of different things in order like		
	months of the year)		
motor_skills	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Motor skills		
visual_processing	What areas of difficulty do you consider to be the	Nominal	None
	key characteristics of dyslexia?		
	Dyslexia is characterised by difficulties in (please		
	select all that apply) Visual processing		

auditory_processing	What areas of difficulty do you consider to be the	Nominal	None		
	key characteristics of dyslexia?				
	Dyslexia is characterised by difficulties in (please				
	select all that apply) Auditory processing				
brain_functioning	Dyslexia is caused by differences in an individual's	Ordinal	Target		
	brain functioning				
Environmental	Environmental factors such as an individual's	Ordinal	Target		
_factors	socio-cultural background can play a role in				
	causing dyslexia				
flexibility_learning	Students with dyslexia are disabled not by their	Ordinal	Target		
_envt	condition but by the lack of flexibility of their				
	learning environment	ning environment			
dyslexia_or_not	An individual either has dyslexia or doesn't have	Ordinal	Target		
	dyslexia				
diagnostic_category	'Dyslexia' cannot be considered a distinct	Ordinal	Target		
	diagnostic category				
dyslexia_comments	Please use the box below to outline any additional	Nominal	None		
	comments relating to your understanding of				
	yslexia				
exam	For students with dyslexia, how important do you	Ordinal	Target		
_accommodations	think the following Disability/Access Service				
	supports are? - Exam accommodations				
assignment_	For students with dyslexia, how important do you	Ordinal	Target		
accommodations	think the following Disability/Access Service				
	supports are? - Assignment accommodations				
record_lectures	For students with dyslexia, how important do you	Ordinal	Target		
	think the following Disability/Access Service				
	supports are? - Permission to record lectures				
personal_support	For students with dyslexia, how important do you	Ordinal	Target		
	think the following Disability/Access Service				
	supports are? - Personal / social / emotional				
	support				

learning_support assistive _technology	For students with dyslexia, how important do you think the following Disability/Access Service supports are? - Additional learning supports / occupational therapy For students with dyslexia, how important do you think the following Disability/Access Service supports are? - Assistive technology supports	Ordinal Ordinal	Target
lecturer	For lecturers, how important do you think the	Ordinal	Target
_guidelines	following Disability/Access Service supports are regarding students with dyslexia? - Guidelines on supporting students with dyslexia		
lecturer	For lecturers, how important do you think the	Ordinal	Target
_training	following Disability/Access Service supports are regarding students with dyslexia? - Training on		
	supporting students with dyslexia (including general supporting students with disabilities training)		
lecturer_UDL	For lecturers, how important do you think the following Disability/Access Service supports are regarding students with dyslexia? - Training on implementing Universal Design for Learning	Ordinal	Target
dyslexia _consultation	For students with suspected but undiagnosed dyslexia, how important do you think the following Disability/Access Service supports are? - Dyslexia consultation	Ordinal	Target
dyslexia _screening	For students with suspected but undiagnosed dyslexia, how important do you think the following Disability/Access Service supports are? - Dyslexia screening service	Ordinal	Target
dyslexia _assessment	For students with suspected but undiagnosed dyslexia, how important do you think the following Disability/Access Service supports are? - Full dyslexia assessment and diagnosis service	Ordinal	Target

student_supports	Please use the box below to outline any additional	Nominal	None
_comments	comments regarding the value of different		
	supports for students who have dyslexia		
used_seeking	Please rank how common, in your opinion, the	Ordinal	Target
_support	following reasons are for students with dyslexia		
	choosing NOT to register for disability support.		
	Drag and drop the options from 1 (most common)		
	at the top to 6 (least common) at the bottom		
	They are not used A2000		
stigma	Please rank how common, in your opinion, the	Ordinal	Target
	following reasons are for students with dyslexia		
	choosing NOT to register for disability support.		
	Drag and drop the options from 1 (most common)		
	at the top to 6 (least common) at the bottom		
	They are worried aF4000		
want_manage	Please rank how common, in your opinion, the	Ordinal	Target
_independently	following reasons are for students with dyslexia		
	choosing NOT to register for disability support.		
	Drag and drop the options from 1 (most common)		
	at the top to 6 (least common) at the bottom		
	They want to managF4000		
dont_know	Please rank how common, in your opinion, the	Ordinal	Target
_supports	following reasons are for students with dyslexia		
	choosing NOT to register for disability support.		
	Drag and drop the options from 1 (most common)		
	at the top to 6 (least common) at the bottom		
	They don't know F4000		
dont_consider	Please rank how common, in your opinion, the	Ordinal	Target
_disability	following reasons are for students with dyslexia		
	choosing NOT to register for disability support.		
	Drag and drop the options from 1 (most common)		
	at the top to 6 (least common) at the bottom		
	They don't consiF4000		

avail	Please rank how common, in your opinion, the	Ordinal	Target
_mainstreamed	following reasons are for students with dyslexia		
	choosing NOT to register for disability support.		
	Drag and drop the options from 1 (most common)		
	at the top to 6 (least common) at the bottom		
	They can avail of F4000		
excluded	Under the current	Ordinal	Target
_support	system, students who have literacy issues but who		
	do not have a formal dyslexia		
	diagnosis are excluded from receiving appropriate		
	support		
all_student	The Disability/Access Service should provide	Ordinal	Target
_literacy	support for all students experiencing literacy		
	difficulties regardless of whether or not they have		
	a dyslexia diagnosis		
mainstreamed	Mainstreamed supports like free assistive	Ordinal	Target
_meet_needs	technology and Writing Centres can meet the		
	needs of students with dyslexia without them		
	availing of Disability/Access Service support		
unique_needs	Students with dyslexia have unique learning	Ordinal	Target
	needs beyond literacy issues that require		
	additional Disability/Access Service support		
access_supports	Please use the box below to provide any	Nominal	None
_comments	additional comments on students accessing		
	supports		
udl_no_register	Students with dyslexia would no longer need to	Ordinal	Target
	register for additional Disability/Access Service		
	supports if all modules were designed according		
	to the principles of Universal Design for Learning		
udl_realistic	Re-designing all modules across a higher	Ordinal	Target
	education institution in line with the principles of		
	Universal Design for Learning is a realistic goal		

disability	Disability/Access service staff should take the lead Ordinal	lity/Access service staff should take the lead Ordinal Ta	
_lead_udl	in implementing Universal Design for Learning in		
	their institution		
confident_advise	I am confident in my ability to advise lecturers on	Ordinal	Target
_udl	how to practically implement Universal Design for		
	Learning		
udl_conditions	Disability/Access Service staff should have better	Ordinal	Target
	pay and conditions if they are to assume a role in		
	implementing Universal Design for Learning in		
	their institution		
udl_comment	Please use the box below to provide any	Nominal	None
	additional comments on Universal Design for		
	Learning and how you perceive your role in		
	implementing it		
year_exp_group	Year experience grouping	Nominal	Input
uni_vs_IT	University or IT/college	Nominal	Input
proflearning	Professional learning dyslexia or not	Nominal	Input

Variable values

Variable	Value	Label
Plainlanguage	1	Yes
Understand_info	1	Yes
Opportunity_ask	1	Yes
Data_protection	1	Yes
Satisfactory_ans	1	Yes
Withdraw	1	Yes
Confidentiality	1	Yes
Consent	1	Yes
Publication	1	Yes
ТуреНЕІ	1	University (including Technological University)
	2	Institute of Technology
	3	College

Position	1	Head of Service
	2	Disability Officer
	3	Learning Support Officer
	4	Occupational Therapist
	5	Psychologist
	6	Assistive Technology Officer
	7	Inclusive learning lead
	8	Careers advisor
	9	Other
dyslexia_training	1	Yes
	2	No
reading	1	Reading
spelling	1	Spelling
writing	1	Writing
phonological_processing	1	Phonological processing (i.e. in self-
		awareness of the structure of sounds within
		a language)
working_memory	1	Working memory, which hold chunks of
		information while it is being worked on
		intornation while it is being worked on
quickly_retrieving_info_from_LTM	1	Quickly retrieving information from long
quickly_retrieving_info_from_LTM	1	Quickly retrieving information from long term memory
quickly_retrieving_info_from_LTM skills_automaticity	1	Quickly retrieving information from long term memory Learning basic skills in any area to an
quickly_retrieving_info_from_LTM skills_automaticity	1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level
quickly_retrieving_info_from_LTM skills_automaticity organisation	1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation
quickly_retrieving_info_from_LTMskills_automaticityorganisationsequencing	1 1 1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of
quickly_retrieving_info_from_LTM skills_automaticity organisation sequencing	1 1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of different things in order like months of the
quickly_retrieving_info_from_LTM skills_automaticity organisation sequencing	1 1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of different things in order like months of the year)
quickly_retrieving_info_from_LTM skills_automaticity organisation sequencing motor_skills	1 1 1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of different things in order like months of the year) Motor skills
quickly_retrieving_info_from_LTMskills_automaticityorganisationsequencingmotor_skillsvisual_processing	1 1 1 1 1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of different things in order like months of the year) Motor skills Visual processing
quickly_retrieving_info_from_LTMskills_automaticityorganisationsequencingmotor_skillsvisual_processingauditory_processing	1 1 1 1 1 1 1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of different things in order like months of the year) Motor skills Visual processing Auditory processing
quickly_retrieving_info_from_LTM skills_automaticity organisation sequencing motor_skills visual_processing auditory_processing brain_functioning	1 1 1 1 1 1 1 1 1 1	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of different things in order like months of the year) Motor skills Visual processing Auditory processing Strongly disagree
quickly_retrieving_info_from_LTM skills_automaticity organisation sequencing motor_skills visual_processing auditory_processing brain_functioning	1 1 1 1 1 1 1 1 1 1 2	Quickly retrieving information from long term memory Learning basic skills in any area to an automatic level Organisation Sequencing (i.e. knowing the sequence of different things in order like months of the year) Motor skills Visual processing Auditory processing Strongly disagree Disagree

	4	Agree
	5	Strongly agree
environmental_factors	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
flexibility_learning_envt	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
dyslexia_or_not	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
diagnostic_category	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
exam_accommodations	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
assignment_accommodations	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
record_lectures	1	Not at all important

	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
personal_support	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
learning_support	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
assistive_technology	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
lecturer_guidelines	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
lecturer_training	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
lecturer_UDL	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important

	5	Extremely important
dyslexia_consultation	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
dyslexia_screening	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
dyslexia_assessment	1	Not at all important
	2	Slightly important
	3	Moderately important
	4	Very important
	5	Extremely important
used_seeking_support	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
stigma	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
want_manage_independently	1	1
	2	2
	3	3
	4	4
	5	5

	6	6
dont_know_supports	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
dont_consider_disability	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
avail_mainstreamed	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
excluded_support	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
all_student_literacy	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
mainstreamed_meet_needs	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree

	5	Strongly agree
unique_needs	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
udl_no_register	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
udl_realistic	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
disability_lead_udl	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
confident_advise_udl	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
udl_conditions	1	Strongly disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
year_exp_group	1	less than 10 years
	2	10 years or more

uni_vs_IT	1	university
	2	IT/College
proflearning	1	professional learning in dyslexia
	2	no professional learning in dyslexia

Appendix R: Phase 2 reflexive thematic analysis NVIVO codebook

Phase 2: Generating initial codes

Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.

	Name	Description	Files	References
1.	Academic work an ongoing struggle	Reference to experience of ongoing or long term struggle in undertaking academic work.	3	4
2.	Alternative assessments coordinated through DS office	Reference to alternative assessments for some students with disabilities coordinated through the DS.	1	1
3.	Assessment - cost barrier	Reference to the high cost of undergoing psycho- educational assessment.	2	3
4.	Assessment - disability or dyslexia consultation	Reference to disability or dyslexia consultation as part of service offerings	2	2
5.	Assessment - financial support provided	Reference to students being able to access funds for assessment through SAF.	8	9
6.	Assessments - screening service	Reference to dyslexia screening availability as part of service offerings.	6	6
7.	Assessments provided by HEI - resource implications	Reference to resource implications / cost of providing in house psycho-educational assessments to students.	5	5
8.	Assessments provided in house - benefits	Reference to benefits of services providing psycho-educational assessments in house.	5	6
9.	Benefit of alternative assessments	Reference to benefit of alternative assessments for students.	19	24
10.	Benefit of high quality feedback	Reference to the benefit of high quality feedback for student learning.	5	6
11.	Benefit of interactions with lecturers to discuss needs	Reference to benefits of interactions, conversation or other forms of communication with lecturers for student learning.	8	11
12.	Benefit of learning from peers how to manage learning challenges	Reference to students learning from their peers on how to manage their learning challenges.	2	2
13.	Benefit of lecturer availability	Reference to the benefit of lecturer availability or approachability for student learning.	2	2

	Name	Description	Files	References
14.	Benefit of lecturer conducting engaging learning activities with the class	Reference to the benefit of lecturer conducting engaging learning activities with the class for student learning.	1	1
15.	Benefit of lecturers providing information in different formats	Reference to benefit of lecturers providing information, class materials etc in different formats for student learning.	10	10
16.	Benefit of recorded lectures	Reference to the benefit of recorded lectures for student learning.	7	11
17.	Biopsychosocial understanding of dyslexia	Reference to a biopsychosocial model or understanding of dyslexia.	1	1
18.	Characteristics of dyslexic students changed	Reference to how characteristics of this cohort have changed over time in service delivery.	1	1
19.	Confusion around spelling and grammar waiver	Reference to confusion amongst students around difference between dyslexia marking guidelines and a spelling and grammar waiver.	2	2
20.	Covid impact on teaching and learning	Reference to how covid has impacted on how HEIs conduct teaching and learning.	10	13
21.	DARE cut offs difficulties	Reference to difficulties caused by strict eligibility cut offs in DARE scheme.	3	3
22.	Desire for confidentiality	Reference to desire for confidentiality when using the DS.	2	2
23.	Difficulties created by funding model	Reference to difficulties created by funding model for disability support services in HEIs.	4	5
24.	Difficulty assessing dyslexia	Reference to the difficulty of meaningfully assessing dyslexia.	2	2
25.	Difficulty supporting non assessed students under current model	Reference to difficulties supporting students without assessment under current resource allocation model	4	5
26.	Difficulty telling difference between dyslexia and literacy difficulty	Reference to difficulty telling what is dyslexia from a 'normal' issue with literacy.	1	1
27.	Difficulty with differences in school vs college systems	Reference to difficulty caused by schools and HEIs using different models of resource and exam accommodations.	5	6
28.	Disability pride and openness	Reference to disability pride or openness to disclose amongst students.	1	3
29.	Diversity of views of what dyslexia is	Reference to how many different things the term 'dyslexia' refers to.	2	4

	Name	Description	Files	References
30.	Documentation required to register for support	Reference to formal disability documentation required to register for DS support.	7	8
31.	DS trying to provide some mainstreamed supports available to all	Reference to DS providing some of their supports to all students.	4	5
32.	Dyslexia - cognitive difficulties	Reference to cognitive difficulties associated with dyslexia as feature of the condition.	13	16
33.	Dyslexia - Comorbidity	Reference to dyslexia comorbidity with other developmental conditions.	8	10
34.	Dyslexia - compensatory strategies	Reference to students being able to use compensatory strategies to overcome or partially overcome their learning challenges.	17	22
35.	Dyslexia - difficulty taking notes	Reference to difficulties taking notes in class as a regular experience for students with dyslexia.	7	9
36.	Dyslexia - environmental causes	Reference to environmental factors causing or contributing to dyslexia.	3	3
37.	Dyslexia - many forms of the condition	Reference to their being many different forms of dyslexia.	1	1
38.	Dyslexia - neurodiversity	Reference to concept of neurodiversity in relation to dyslexia.	4	6
39.	Dyslexia - reference to discrepancy model	Reference to discrepancy model as a definition or understanding of dyslexia.	2	2
40.	Dyslexia - time and organisational demands	Reference to students with dyslexia struggling with time management/organisation or requiring more time to complete tasks.	14	21
41.	Dyslexia and reading difficulty same for intervention	Reference to same interventions being applicable whether a student is presenting with formal 'dyslexia' or just a 'reading difficulty'	1	1
42.	Dyslexia as an unscientific concept	Reference to dyslexia as being an unscientific concept.	1	1
43.	Dyslexia as different way of thinking and learning	Reference to dyslexia in broad terms as a different way of thinking and learning.	6	7
44.	Dyslexia as heritable condition	Reference to dyslexia as a heritable or genetic- based disorder.	9	9
45.	Dyslexia as lifelong condition	Reference to dyslexia as a lifelong condition.	19	19
46.	Dyslexia as neurological condition	Reference to dyslexia as a neurological or brain based disorder.	8	8

	Name	Description	Files	References
47.	Dyslexia as primarily concerned with literacy	Reference to dyslexia as primarily relating to literacy difficulties.	19	24
48.	Dyslexia gifts	Reference to dyslexia bestowing unique gifts or talents on the individual.	8	8
49.	Dyslexic difficulties more apparent in third level	Reference to dyslexic type difficulties becoming more apparent in third level with complex academic workload.	3	3
50.	Emotional impact of dyslexia	Reference to personal emotional impact of dyslexia on students.	11	15
51.	Family experience of disability or dyslexia	Reference to family experience of disability or dyslexia.	4	4
52.	Free or low cost AT	Reference to free or low cost AT solutions accessible to all that are of benefit to students.	12	16
53.	General generic supports for all students with disabilities	Reference to providing general generic supports (e.g. exam accommodations) for all students registered with the DS.	1	2
54.	Heterogeneity of students with dyslexia	Reference to heterogeneous presentations or students with dyslexia.	4	5
55.	Importance of continuous communication from DS	Reference to importance of ongoing communication from DS to students.	2	2
56.	Importance of course choice	Reference to importance for course choice for success for students with dyslexia.	5	5
57.	Importance of extra- curricular activities	Reference to importance of extra-curricular activities for students with dyslexia.	1	1
58.	Increase awareness of DS supports for general student body	Reference to increasing awareness of disability supports for students.	1	1
59.	Joint inclusive education projects	Reference to provision of joint inclusive education projects between different units in an institution or across institutions.	1	1
60.	Lack of personal support from DS	Reference to lack of personal supports from DS for students with dyslexia.	2	4
61.	Must advocate for your own needs	Reference to students having to advocate for their own disability or learning needs.	2	3
62.	Negative school experience	Reference to negative school experience in relation to studying with dyslexia.	6	9
63.	Non-disclosure - fear of professional impact	Reference to possibility of non-disclosure due to fear of impact on career progression.	1	1

	Name	Description	Files	References
64.	Non-disclosure - lack of awareness of supports	Reference to lack of awareness of supports as a potential reason for non-disclosure.	14	14
65.	Non-disclosure - stigma	Reference to stigma as a potential cause for non- disclosure.	17	17
66.	Non-disclosure - strive for independence	Reference to a strive for independence as a potential cause for non-disclosure.	6	7
67.	Non-disclosure not a big issue	Reference to non-disclosure not being an issue of note amongst students with dyslexia.	2	3
68.	Positivity towards research project	Expresses positivity towards research project.	6	7
69.	Quick to engage with DS	Reference to students with dyslexia being quick to engage with DS supports.	1	1
70.	Receive less focus than other disability categories	Reference to students with dyslexia receiving less focus or attention than students in other disability cohorts.	1	1
71.	Reference to 'inclusion'	Reference to the concepts of 'inclusion' or 'inclusivity' or 'inclusive education'.	10	15
72.	Shortcomings of mainstreamed services	Reference to the shortcomings of mainstreamed support services in meeting the needs of students with dyslexia.	9	11
73.	Simple standard AT solutions	Reference to small number of simple standard AT software solutions for students with dyslexia.	1	1
74.	Some level of specialist support for non-diagnosed students	Reference to providing some level of specialist supports for non-diagnosed students.	10	14
75.	Specialist reading and writing supports	Reference to specialist reading and writing support provided by DS in addition to mainstream services.	2	2
76.	Student awareness of general disability supports	Reference to need to keep students aware of available supports.	1	1
77.	Studentsexcludedfrom full supports iflackingformalevidence	Reference to students not being able to access full supports without formal evidence.	10	11
78.	Support with reading strategies	Reference to specialist DS supports for students in developing reading strategies.	2	2
79.	Support with written work	Reference to specialist supports provided for approaching written work.	12	16
80.	Supports - benefits of individual subject tuition	Reference to benefit of individual subject tuition for students with dyslexia.	1	1

	Name	Description	Files	References
81.	Supports - exam accommodations of emotional benefit	Reference to exam accommodations as being mainly of emotional support, reassuring to students.	5	5
82.	Supports - importance of AT	Reference to importance of AT for students with dyslexia in overcoming their learning challenges.	20	28
83.	Supports - importance of exam accommodations	Reference to importance of exam accommodations for students with dyslexia.	12	16
84.	Supports - importance of lecturer liaison	Reference to the importance of the DS role in liaising with lecturers and academic faculty regarding the individual learning needs of students with dyslexia.	9	14
85.	Supports - importance of needs assessment	Reference to the importance of the needs assessment process for students with dyslexia.	1	2
86.	Supports - lack of engagement with developmental supports	Reference to students with dyslexia not engaging with developmental supports e.g. skills workshops provided by DS.	2	2
87.	Supports - many students needs met with low level supports	Reference to many dyslexic students' needs being met by low level supports such as AT and exam accommodations not requiring significant staff input.	8	10
88.	Supports - need for shared approach to provision across HEIs	Reference to the need for a shared approach to service provision across all HEIs.	2	2
89.	Supports - pastoral or emotional or social support role	Reference to pastoral or emotional or social support role of DS for students with dyslexia.	12	15
90.	UDL - individual staff funding to undertake training	Reference to providing individual lecture staff with funding to provide cover for them to undertake UDL training.	1	1
91.	UDL - institutional barriers	Reference to institutional barriers to UDL implementation.	3	3
92.	UDL - over reliance on DS to lead	Reference to over reliance on DS to lead UDL implementation.	1	1
93.	UDL - shortcomings	Reference to the shortcomings of the UDL approach.	4	4
94.	UDL advocacy	Reference to DS role in advocating for UDL.	8	10
95.	UDL as a joint endeavour	Reference to UDL as a joint endeavour with other units within the HEI.	8	15
96.	UDL barrier - cost	Reference to the cost of UDL implementation as a barrier to its delivery.	1	1

	Name	Description	Files	References
97.	UDL barrier - staff buy in	Reference to staff buy-in as a barrier to UDL implementation.	7	11
98.	UDL collaboration or inclusive education work	Reference to collaborative UDL or inclusive education projects	3	3
99.	UDL delivery - open to role in it	Reference to willingness to adopt a role in implementing UDL.	3	3
100.	UDL familiarity	Reference to familiarity with UDL model.	9	9
101.	UDL feasible	Reference to UDL implementation being a feasible goal.	6	7
102.	UDL positive	Reference to UDL as a positive concept and/or target for implementation.	11	14
103.	UDL reduce numbers registering	Reference to UDL implementation potentially reducing number of students with dyslexia using the service into the future.	1	1
104.	UDL role - providing staff training	Reference to providing staff training as part of the DS role in delivering UDL.	3	3
105.	UDL shouldn't be a DS issue	Reference to UDL being more than a disability or disability service issue.	4	5
106.	UDL would not remove dyslexia supports	Reference to successful UDL implementation not removing the need for specialist dyslexia supports.	9	13
107.	UDL would remove need for dyslexia supports	Reference to successful UDL implementation meaning students with dyslexia would not require additional specialist supports.	1	1
108.	Unclear difference between dyslexia and reading difficulty	Reference to confusion over what is the difference between dyslexia and a reading difficulty.	2	2
109.	Unique occupational path	Reference to staff member ending up in HE disability support by various different method - no set path into the occupation.	9	10
110.	Use of mainstream services	Reference to students utilising mainstreamed support services e.g. writing centre.	4	6
111.	Value of RAs as legal entitlements	Reference to the value or power of reasonable accommodations as stipulated via DS in their profile of needs document as having a legal weight, faculty having to act upon it.	3	3
112.	Value of some 'dyslexia' supports to general student body	Reference to the value of some traditionally dyslexia-specific supports as being of valuable to the general student body.	1	1
113.	Value of the student understanding their dyslexic type difficulties	Reference to the value of students understanding their dyslexia 'profile' or nature of their learning needs.	2	3

	Name	Description	Files	References
114.	Work role - not interested in working in mainstreamed service	Reference to lack of interest in working in a mainstream support unit.	1	1
115.	Work role - open to mainstream support service work	Reference to willingness to take on role in mainstream support service.	3	3

Phase 3: Searching for themes

Collating codes into potential themes, gathering all data relevant to each potential theme.

Name	Description	Files	References
Difficulties created by HE model of support	Reference to difficulties created by HE model of support.	21	35
Assessment - cost barrier	Reference to the high cost of undergoing psycho- educational assessment.	2	3
Assessments provided by HEI - resource implications	Reference to resource implications / cost of providing in house psycho-educational assessments to students.	5	5
DARE cut offs difficulties	Reference to difficulties caused by strict eligibility cut offs in DARE scheme.	3	3
Difficulties created by funding model	Reference to difficulties created by funding model for disability support services in HEIs.	4	5
Difficulty supporting non assessed students under current model	Reference to difficulties supporting students without assessment under current resource allocation model.	4	5
Difficulty with differences in school vs college systems	Reference to difficulty caused by schools and HEIs using different models of resource and exam accommodations.	5	6
Documentation required to register for support	Reference to formal disability documentation required to register for DS support.	7	8
Dyslexia as neuro developmental condition	Reference to dyslexia as a neuro-developmental condition.	24	83
Dyslexia - Comorbidity	Reference to dyslexia comorbidity with other developmental conditions.	8	10
Dyslexia as a lifelong condition	Reference to dyslexia as a lifelong condition.	19	19
Dyslexia described in brain- based, organic terms	Reference to dyslexia in brain-based organic terms	17	33
Dyslexia - cognitive difficulties	Reference to cognitive difficulties associated with dyslexia as feature of the condition.	13	16

Name	Description	Files	References
Dyslexia as heritable condition	Reference to dyslexia as a heritable or genetic-based disorder.	9	9
Dyslexia as neurological condition	Reference to dyslexia as a neurological or brain based disorder.	8	8
Dyslexia described in neurodiverse terms	Reference to dyslexia in neurodiverse terms	15	21
Dyslexia - neurodiversity	Reference to concept of neurodiversity in relation to dyslexia.	4	6
Dyslexia as different way of thinking and learning	Reference to dyslexia in broad terms as a different way of thinking and learning.	6	7
Dyslexia gifts	Reference to dyslexia bestowing unique gifts or talents on the individual.	8	8
Dyslexia as primarily concerned with literacy	Reference to dyslexia as primarily relating to literacy difficulties.	19	24
Dyslexia supports	Reference to supports working well for students.	13	24
Alternative assessments coordinated through DS office	Reference to alternative assessments for some students with disabilities coordinated through the DS.	1	1
General generic supports for all students with disabilities	Reference to providing general generic supports (e.g. exam accommodations) for all students registered with the DS.	1	2
Lack of personal support from DS	Reference to lack of personal supports from DS for students with dyslexia.	2	4
Quick to engage with DS	Reference to students with dyslexia being quick to engage with DS supports.	1	1
Receive less focus than other disability categories	Reference to students with dyslexia receiving less focus or attention than students in other disability cohorts.	1	1
Support with reading strategies	Reference to specialist DS supports for students in developing reading strategies.	2	2
Supports - benefits of individual subject tuition	Reference to benefit of individual subject tuition for students with dyslexia.	1	1
Supports - importance of needs assessment	Reference to the importance of the needs assessment process for students with dyslexia.	1	2
Supports-lackofengagementwithdevelopmental supports	Reference to students with dyslexia not engaging with developmental supports e.g. skills workshops provided by DS.	2	2
Supports - need for shared approach to provision across HEIs	Reference to the need for a shared approach to service provision across all HEIs.	2	2
Value of RAs as legal entitlements	Reference to the value or power of reasonable accommodations as stipulated via DS in their profile of needs document as having a legal weight, faculty having to act upon it.	3	3

Name	Description	Files	References
Value of the student understanding their dyslexic type difficulties	Reference to the value of students understanding their dyslexia 'profile' or nature of their learning needs.	2	3
Findings ways to support non-diagnosed students	Reference to different ways to support non- diagnosed students	16	42
Assessment - disability or dyslexia consultation	Reference to disability or dyslexia consultation as part of service offerings	2	2
Assessments - screening service	Reference to dyslexia screening availability as part of service offerings.	6	6
DS trying to provide some mainstreamed supports available to all	Reference to DS providing some of their supports to all students.	4	5
Financial support for assessment	Reference to financial support being provided within the HEI to meet the cost of assessment.	10	15
Assessment - financial support provided	Reference to students being able to access funds for assessment through SAF.	8	9
Assessments provided in house - benefits	Reference to benefits of services providing psycho- educational assessments in house.	5	6
Some level of specialist support for non-diagnosed students	Reference to providing some level of specialist supports for non-diagnosed students.	10	14
Low level specialist supports working well for students	Reference to low level specialist supports working well for students	31	123
Low level supports	Reference to low level supports for students with dyslexia.	30	80
Assistive technology	Reference to assistive technology benefits for students.	26	45
Free or low cost AT	Reference to free or low cost AT solutions accessible to all that are of benefit to students.	12	16
Simple standard AT solutions	Reference to small number of simple standard AT software solutions for students with dyslexia.	1	1
Supports - importance of AT	Reference to importance of AT for students with dyslexia in overcoming their learning challenges.	20	28
Supports - exam accommodations of emotional benefit	Reference to exam accommodations as being mainly of emotional support, reassuring to students.	5	5
Supports - importance of exam accommodations	Reference to importance of exam accommodations for students with dyslexia.	12	16
Supports - importance of lecturer liaison	Reference to the importance of the DS role in liaising with lecturers and academic faculty regarding the individual learning needs of students with dyslexia.	9	14
Support with written work	Reference to support with written work as beneficial to students.	14	18

Name	Description	Files	References
Specialist reading and writing supports	Reference to specialist reading and writing support provided by DS in addition to mainstream services.	2	2
Support with written work	Reference to specialist supports provided for approaching written work.	12	16
Supports - many students needs met with low level supports	Reference to many dyslexic students' needs being met by low level supports such as AT and exam accommodations not requiring significant staff input.	8	10
Supports - pastoral or emotional or social support role	Reference to pastoral or emotional or social support role of DS for students with dyslexia.	12	15
Non-disclosure as a result of multiple factors	Reference to non-disclosure occurring as a result of different factors.	22	47
Desire for confidentiality	Reference to desire for confidentiality when using the DS.	2	2
Importance of continuous communication from DS	Reference to importance of ongoing communication from DS to students.	2	2
Increase awareness of DS supports for general student body	Reference to increasing awareness of disability supports for students.	1	1
Must advocate for your own needs	Reference to students having to advocate for their own disability or learning needs.	2	3
Non-disclosure - fear of professional impact	Reference to possibility of non-disclosure due to fear of impact on career progression.	1	1
Non-disclosure - lack of awareness of supports	Reference to lack of awareness of supports as a potential reason for nondisclosure.	14	14
Non-disclosure - stigma	Reference to stigma as a potential cause for non- disclosure.	17	17
Non-disclosure - strive for independence	Reference to a strive for independence as a potential cause for non-disclosure.	6	7
The significant impact of dyslexia on the individual	Reference to the significant personal or academic impact of dyslexia on the individual.	18	61
Academic challenges	Reference to the academic challenges experienced by students with dyslexia.	17	37
Academic work an ongoing struggle	Reference to experience of ongoing or long term struggle in undertaking academic work.	3	4
Dyslexia - difficulty taking notes	Reference to difficulties taking notes in class as a regular experience for students with dyslexia.	7	9
Dyslexia - time and organisational demands	Reference to students with dyslexia struggling with time management/organisation or requiring more time to complete tasks.	14	21
Dyslexic difficulties more apparent in third level	Reference to dyslexic type difficulties becoming more apparent in third level with complex academic workload.	3	3

Name	Description	Files	References
Personal impact of dyslexia	Reference to the personal impact of dyslexia on the individual.	11	24
Emotional impact of dyslexia	Reference to personal emotional impact of dyslexia on students.	11	15
Negative school experience	Reference to negative school experience in relation to studying with dyslexia.	6	9
UDL as a positive vision for the future	Reference to UDL providing a positive future vision for HEIs to meet the needs of students with disabilities/dyslexia.	34	137
DS role in UDL advocacy	Reference to DS role in advocating for UDL.	8	10
UDL as a joint endeavour	Reference to UDL being a joint endeavour across different departments/units in the institution.	11	26
UDL collaboration or inclusive education work	Reference to collaborative UDL or inclusive education projects	3	3
UDL cooperation	Reference to UDL as a joint mission/project in collaboration with other units within the HEI.	8	15
UDL delivery - open to role in it	Reference to willingness to adopt a role in implementing UDL.	3	3
UDL shouldn't be a DS issue	Reference to UDL being more than a disability or disability service issue.	4	5
UDL complementing not removing dyslexia supports	Reference to successful UDL implementation not removing the need for specialist dyslexia supports.	9	13
UDL desirable	Reference to desirability of UDL implementation or the positive impact of UDL techniques on student learning.	33	78
Student benefits	Reference to UDL aspects that benefit students.	27	64
Benefit of alternative assessments	Reference to benefit of alternative assessments for students.	19	24
Benefit of high quality feedback	Reference to the benefit of high quality feedback for student learning.	5	6
Benefit of interactions with lecturers to discuss needs	Reference to benefits of interactions, conversation or other forms of communication with lecturers for student learning.	8	13
Benefit of lecturers providing information in different formats	Reference to benefit of lecturers providing information, class materials etc in different formats for student learning.	10	10
Benefit of recorded lectures	Reference to the benefit of recorded lectures for student learning.	7	11
UDL positive	Reference to UDL as a positive concept and/or target for implementation.	11	14
UDL feasible	Reference to UDL implementation being a feasible goal.	6	7
UDL role - providing staff training	Reference to providing staff training as part of the DS role in delivering UDL.	3	3

Name	Description	Files	References
UDL challenges to be overcome	Reference to challenges to be overcome to deliver UDL.	11	20
UDL - complexities	Reference to the complexities of the UDL framework and the challenges this poses.	4	4
UDL - individual staff funding to undertake training	Reference to providing individual lecture staff with funding to provide cover for them to undertake UDL training.	1	1
UDL - institutional barriers	Reference to institutional barriers to UDL implementation.	3	3
UDL challenge - cost	Reference to the cost of UDL implementation as a challenge to its delivery.	1	1
UDL challenge - staff buy in	Reference to staff buy-in as a challenge to UDL implementation.	7	11
Understanding of dyslexia - other details	Reference to understanding of dyslexia, other details beyond neuro-developmental condition.	22	48
Biopsychosocial understanding of dyslexia	Reference to a biopsychosocial model or understanding of dyslexia.	1	1
Difficulty assessing dyslexia	Reference to the difficulty of meaningfully assessing dyslexia.	2	2
Diversity of views of what dyslexia is	Reference to how many different things the term 'dyslexia' refers to.	2	4
Dyslexia - compensatory strategies	Reference to students being able to use compensatory strategies to overcome or partially overcome their learning challenges.	17	22
Dyslexia - environmental causes	Reference to environmental factors causing or contributing to dyslexia.	3	3
Dyslexia - reference to discrepancy model	Reference to discrepancy model as a definition or understanding of dyslexia.	2	2
Dyslexia and reading difficulty same for intervention	Reference to same interventions being applicable whether a student is presenting with formal 'dyslexia' or just a 'reading difficulty'	1	1
Dyslexia as an unscientific concept	Reference to dyslexia as being an unscientific concept.	1	1
Family experience of disability or dyslexia	Reference to family experience of disability or dyslexia.	4	4
Heterogeneity of students with dyslexia	Reference to heterogeneous presentations or students with dyslexia.	5	6
Unclear difference between dyslexia and reading difficulty	Reference to confusion over what is the difference between dyslexia and a reading difficulty.	2	2

Phase 4: Reviewing themes

Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.

Name	Description	Files	References
Compensatory strategies utilised to overcome the impact of dyslexia	Reference to students being able to use compensatory strategies to overcome or partially overcome their learning challenges.	17	23
Difficulties created by HE model of support	Reference to difficulties created by HE model of support.	8	11
Dyslexia as a neuro- developmental condition	Reference to dyslexia as a neuro-developmental condition.	24	81
Dyslexia as a lifelong condition	Reference to dyslexia as a lifelong condition.	19	19
Dyslexia comorbidity	Reference to dyslexia comorbidity with other developmental conditions.	8	9
Dyslexia described in brain- based terms	Reference to dyslexia in brain-based terms.	17	32
Dyslexia - cognitive difficulties	Reference to cognitive difficulties associated with dyslexia as a feature of the condition.	13	16
Dyslexia as heritable condition	Reference to dyslexia as a heritable or genetic-based disorder.	8	8
Dyslexia as neurological condition	Reference to dyslexia as a neurological or brain- based disorder.	8	8
Dyslexia described in neurodiverse terms	Reference to dyslexia in neurodiverse terms.	15	21
Dyslexia as a different way of thinking and learning	Reference to dyslexia in broad terms as a different way of thinking and learning.	6	7
Dyslexia as neurodiversity	Reference to concept of neurodiversity in relation to dyslexia.	5	6
Dyslexia gifts	Reference to dyslexia bestowing unique gifts or talents on the individual.	8	8
Dyslexia as primarily concerned with literacy	Reference to dyslexia as primarily relating to literacy difficulties.	19	24
Findings ways to support non-diagnosed students	Reference to different ways to support non- diagnosed students.	16	43
Dyslexia consultation or screening service	Reference to providing a dyslexia consultation or screening service for non-diagnosed students.	9	9
Assessment - disability or dyslexia consultation	Reference to disability or dyslexia consultation as part of service offerings.	3	3
Assessments - screening service	Reference to dyslexia screening availability as part of service offerinas.	6	6
Name	Description	Files	References
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Financial support for assessment	Reference to financial support being provided within the HEI to meet the cost of assessment.	10	15
Assessment - financial support provided	Reference to students being able to access funds for assessment through student support.	8	9
Assessments provided in house - benefits	Reference to benefits of services providing psycho- educational assessments in house.	5	6
Providing some supports for non-diagnosed students	Reference to different ways of providing some DS supports for non-diagnosed students.	12	19
DS trying to provide some mainstreamed supports available to all	<i>Reference to DS providing some of their supports to all students.</i>	4	5
Some level of specialist support for non-diagnosed students	<i>Reference to providing some level of specialist supports for non-diagnosed students.</i>	10	14
Low level specialist supports working well for students	Reference to low level specialist supports working well for students.	31	122
Beneficial specialist people supports	Reference to specialist people supports that are beneficial to students.	18	31
Pastoral support role	<i>Reference to pastoral support role of DS for students with dyslexia.</i>	12	15
Support with written work	<i>Reference to support with written work as beneficial to students.</i>	14	16
Beneficial low level supports	Reference to low level supports for students with dyslexia.	29	71
Assistive technology	<i>Reference to assistive technology benefits for students.</i>	25	43
Free or low cost AT	<i>Reference to free or low cost AT solutions accessible to all that are of benefit to students.</i>	12	16
Supports - importance of AT	Reference to importance of AT for students with dyslexia in overcoming their learning challenges.	20	27
Exam accommodations	<i>Reference to exam accommodations as beneficial for students with dyslexia.</i>	13	20
Supports - exam accommodations of emotional benefit	Reference to exam accommodations as being mainly of emotional support, reassuring to students.	5	5
Supports - importance of exam accommodations	<i>Reference to importance of exam accommodations for students with dyslexia.</i>	11	15
Supports - importance of lecturer liaison	Reference to the importance of the DS role in liaising with lecturers and academic faculty regarding the individual learning needs of students with dyslexia.	7	8
Many students needs met with low level supports	Reference to many dyslexic students' needs being met by low level supports not requiring significant staff input.	8	10

Name	Description	Files	References
Shortcomings of mainstreamed services	Reference to the shortcomings of mainstreamed support services in meeting the needs of students with dyslexia.	8	10
Non-disclosure as a result of multiple factors	Reference to non-disclosure occurring as a result of multiple different factors.	21	39
Lack of awareness of supports	Reference to lack of awareness of supports as a potential reason for non-disclosure.	14	15
Stigma	Reference to stigma as a potential cause for non- disclosure.	17	17
Strive for independence	Reference to a strive for independence as a potential cause for non-disclosure.	6	7
The significant impact of dyslexia on the individual	Reference to the significant personal or academic impact of dyslexia on the individual.	18	55
Academic challenges	Reference to the academic challenges experienced by students with dyslexia.	17	37
Academic work an ongoing struggle	Reference to experience of ongoing or long term struggle in undertaking academic work.	3	4
Difficulty taking notes	Reference to difficulties taking notes in class as a regular experience for students with dyslexia.	7	9
Dyslexic difficulties more apparent at different life stages	Reference to dyslexic-type difficulties becoming more apparent in different life stages that necessitate more complex reading and writing tasks.	3	3
Time and organisational demands	Reference to students with dyslexia struggling with time management/organisation or requiring more time to complete tasks.	14	21
Emotional impact of dyslexia	Reference to personal emotional impact of dyslexia on students.	11	18
UDL as a positive vision for the future	Reference to UDL providing a positive future vision for HEIs to meet the needs of students with disabilities/dyslexia.	35	147
Staff buy in required	Reference to staff buy-in being required for UDL implementation.	7	12
UDL as a joint endeavour	Reference to UDL being a joint endeavour across different departments/units in the institution.	12	28
DS role in UDL advocacy	Reference to DS role in advocating for UDL.	7	9
UDL cooperation	Reference to UDL as a joint mission/project in collaboration with other units within the HEI.	9	15
UDL shouldn't be just a DS issue	Reference to UDL being more than a disability or disability service issue.	3	4
UDL complementing not removing dyslexia supports	Reference to successful UDL implementation not removing the need for specialist dyslexia supports.	9	13
UDL desirable	Reference to desirability of UDL implementation or the positive impact of UDL techniques on student learning.	34	94

Name	Description	Files	References
Covid impact on teaching and learning	Reference to how covid has impacted on how HEIs conduct teaching and learning.	7	10
Student benefits	Reference to UDL aspects that benefit students.	27	63
Benefit of alternative assessments	Reference to benefit of alternative assessments for students.	19	24
Benefit of high quality feedback	Reference to the benefit of high quality feedback for student learning.	5	6
Benefit of interactions with lecturers to discuss needs	Reference to benefits of interactions, conversation or other forms of communication with lecturers for student learning.	7	12
Benefit of lecturers providing information in different formats	Reference to benefit of lecturers providing information, class materials etc in different formats for student learning.	10	10
Benefit of recorded lectures	Reference to the benefit of recorded lectures for student learning.	7	11
UDL feasible	Reference to UDL implementation being a feasible goal.	6	7
UDL positive	Reference to UDL as a positive concept and/or target for implementation.	11	14

Phase 5: Refining, defining and naming themes

Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.

Name	Description	Files	References
A medical model understanding of dyslexia	This Theme relates to references within the staff and student interviews and service documents to dyslexia in medical model terms. It relates to Theme 1.2 of the study's conceptual framework.	20	35
Dyslexia as a lifelong condition	Reference to dyslexia as a lifelong condition.	19	19
Dyslexia described in brain- based terms.	Reference to dyslexia in brain-based terms.	11	16
Benefits of the dyslexia label	This theme relates to references within the student interviews to benefits of receiving the dyslexia label. It relates to Theme 1.3 of the study's conceptual framework.	7	8
Compensatory strategies to overcome difficulties	This theme relates to references within the staff and student interviews and service documents to students being able to use compensatory strategies to overcome or partially overcome their	17	23

Name	Description	Files	References
	learning challenges. It relates to Theme 2.1 of the study's conceptual framework.		
Difficulties created by model of support	This theme relates to references within the staff interviews to difficulties created by the current model of support for students with dyslexia. It relates to Themes 2.1 and 2.2 of the study's conceptual framework.	6	11
A neurodiversity perspective on dyslexia	This theme relates to references within the staff and student interviews that speak to a neurodiversity perspective on dyslexia. It relates to Theme 1.2 of the study's conceptual framework.	15	21
Dyslexia as a condition impacting literacy	This theme relates to references within the staff and student interviews and service documents to dyslexia impacting on literacy skills. It relates to Theme 1.1 of the study's conceptual framework.	19	24
Supporting students without a diagnosis	This theme relates to references within the staff interviews and service documents to finding different ways to provide some level of support to students without a diagnosis. It relates to Themes 2.1 and 2.2 of the study's conceptual framework.	15	41
Dyslexia consultation or screening service	Reference to providing a dyslexia consultation or screening service for non-diagnosed students.	9	9
Financial support for assessment	Reference to financial support being provided within the HEI to meet the cost of assessment.	9	13
Providing some supports for students without a diagnosis	Reference to different ways of providing some DS supports for students without a diagnosis.	12	19
Effective Disability Service supports	This Theme relates to references within the staff and student interviews and service documents to aspects of Disability Service supports working well for students with dyslexia. It relates to Themes 2.1 and 3.1 of the study's conceptual framework.	31	122
Beneficial higher level supports	Reference to higher level supports that are beneficial to students.	18	31
Beneficial lower level supports	Reference to lower level supports for students with dyslexia.	29	71
Many students needs met with lower level supports	Reference to many dyslexic students' needs being met by lower level supports not requiring significant staff input.	8	10
Shortcomings of mainstreamed services	Reference to the shortcomings of mainstreamed support services in meeting the needs of students with dyslexia.	8	10
Non-disclosure as a result of multiple factors	This theme relates to references within the staff and student interviews to non-disclosure occurring as a result of multiple different factors. It relates to Theme 2.3 of the study's conceptual framework.	21	39
Lack of awareness of supports	Reference to lack of awareness of supports as a potential reason for non-disclosure.	14	15

Name	Description	Files	References
Stigma	Reference to stigma as a potential cause for non- disclosure.	17	17
Strive for independence	Reference to a strive for independence as a potential cause for non-disclosure.	6	7
The impact of dyslexia on areas beyond literacy	This theme relates to references to the impact of dyslexia on areas beyond just literacy. It relates to Themes 1.1 and 2.1 of the study's conceptual framework.	19	64
Dyslexia – cognitive difficulties	Reference to cognitive difficulties associated with dyslexia as a feature of the condition.	15	23
Emotional impact of dyslexia	Reference to personal emotional impact of dyslexia on students.	11	20
Time demands / organisational difficulties	Reference to students with dyslexia struggling with organisation or requiring more time to complete tasks.	14	21
UDL as a positive vision for the future	This theme relates to references within the staff and student interviews and service documents to UDL or aspects of the UDL approach providing a positive future vision for HEIs to meet the needs of students with disabilities/dyslexia. It relates to Themes 2.2 and 2.3 of the study's conceptual framework.	35	144
Staff buy in required	Reference to staff buy-in being required for UDL implementation.	7	12
UDL as a joint endeavour	Reference to UDL being a joint endeavour across different departments/units in the institution.	12	28
UDL complementing not removing dyslexia supports	Reference to successful UDL implementation not removing the need for specialist dyslexia supports.	9	13
UDL desirable	Reference to desirability of UDL implementation or the positive impact of UDL techniques on student learning.	35	91

Appendix S: Sample NVIVO visuals



Qualitative coding Phase 4 NVIVO explore diagram exploring the source data extracts behind the working-titled theme of 'Difficulties created by HE model of support'



Qualitative coding Phase 4 hierarchy chart (based on number of references) for the working-titled theme of 'Compensatory strategies utilised to overcome the impact of dyslexia'