University of Southern Queensland

DIFFERENTIATED INSTRUCTION FOR STUDENTS WITH LEARNING DIFFICULTIES IN SENIOR-SECONDARY AUSTRALIAN SCHOOLS: AN INQUIRY OF TEACHER ATTITUDES AND SELF-EFFICACY

A Thesis submitted by

Tom Porta

B.Ed. (Secondary), BA (Psychology & Biology), Grad.Cert (Spec Ed), M.Ed. (Spec Ed)

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ABSTRACT

Differentiated instruction (DI), a framework that promotes inclusive education, is a praxis for effective teaching that has shown promise in increasing the educational outcomes for students, particularly with learning difficulties. While DI is promoted as a practice for all students, little is known about DI application for students with learning difficulties in senior-secondary schools in Australia. Given DIs success in catering for student diversity, it was pertinent to explore teachers' application and use of DI, and the factors that influence the provision of DI in teachers' senior-secondary classrooms. This is important as students with learning difficulties have decreased post-school outcomes, therefore there was a need to explore ways this could be minimised. The aim of this study was to explore teacher attitudes and self-efficacy and the factors that shape these, towards DI. The DI framework by Tomlinson (2014) and conceptual framework created from the current literature in DI, underpin this study. A social constructionist paradigm was utilised to give the researcher a clear position in the study. Similarly, a case study methodology was used, which led to a total of twelve semi-structured interviews with senior-secondary teachers of various characteristics, across three schools and two Australian states. Data were analysed using a reflexive thematic analysis approach by Braun and Clarke (2021). Results reflected that due to the significant constraints, DI is being viewed as a special education practice. Likewise, teacher self-efficacy is born from seeing students achieve in a differentiated classroom and having respectful relationships with students. Practical and sustained experience in DI is needed for teachers to develop greater self-efficacy in DI and a positive attitude towards the framework. Implications for theory and practice were outlined.

CERTIFICATION OF THESIS

I, Tom Porta, declare that the PhD Thesis entitled "Differentiated instruction for students with learning difficulties in senior-secondary Australian schools: An inquiry of teacher attitudes and self-efficacy" is not more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references, and footnotes. The thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Date: 14/12/2022

Endorsed by: Tom Porta

Principal Supervisor: Dr. Nicole Green

Associate Supervisor: Dr. Nicole Todd

Student and supervisors' signatures of endorsement are held at the University.

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Furthermore, it is important that I acknowledge that copyright of all material contained in my thesis resides with the copyright holder(s) of that material. Where appropriate, I have obtained copyright permission from the copyright holder to reproduce material in this thesis.

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DEDICATIONS

First, I would like to dedicate this thesis to my cousin, Kate Stanley, who has given me the motivation to strive for a more inclusive education system and world. While it has been close to 20 years since we last met, I often imagine the life we could have had together, but your memory lives on in me, and our family, and I am blessed to have had you in my life. I hope that one day we can have a world that is truly inclusive and can make you proud. We will meet again one day.

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This thesis is presented in loving

memory of

"Katie Cools"

1983-2004

"Absolutely everybody"

ABBREVIATIONS

ABC	Attitudes, Behaviour, Cognitive
AC	Australian Curriculum
ACARA	Australian Curriculum, Assessment and Reporting Authority
AITSL	Australian Institute for Teaching and School Leadership
APST	Australian Professional Standards for Teachers
DDA	Disability Discrimination Act
DI	Differentiated Instruction
DSE	Disability Standards for Education
EALD	English as an Additional Language/Dialect
IBDP	International Baccalaureate Diploma Programme
IBO	International Baccalaureate Organization
ICSEA	Index of Community Socio-Educational Advantage
LD	Learning Difficulties
NAPLAN	National Assessment Program for Literacy and Numeracy
NCCD	Nationally Consistent Collection of Data
QCAA	Queensland Curriculum and Assessment Authority
QCE	Queensland Certificate of Education
RTA	Reflexive Thematic Analysis
SACE	South Australian Certificate of Education
SLD	Specific Learning Disability
SWAN	Students With Additional Needs
TPD	Theory of Planned Development
UK	United Kingdom
US	United States
ZPD	Zone of Proximal Development

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CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter provides an overview of the research study as well as its aims and objectives. This research derives from the researcher's own experiences as an educator in senior-secondary schooling and acknowledges any potential biases that may result from the researcher's passionate belief in the differentiated instruction (DI) framework for all teachers. Bias has been minimised through the researcher positioning themselves within a social constructionist paradigm (Guba & Lincoln, 2005), and a clear ontological and epistemological stance further outlined in Chapter 3. At the time of this study, DI has been present for over two decades (Sun & Xiao, 2021), but much of the research on DI in senior-secondary contexts is sparse with research focusing exclusively on junior, middle and lower secondary schools across Australia.

Furthermore, this chapter discusses the history of differentiated instruction (DI) in the first instance. Second, this chapter justifies the use of Tomlinson's (2014) framework for differentiation in this research, and how this research study contributes to Smit and Humpert's (2012) model for DI. Attitudes and beliefs, and how these are constructed, are defined to inform the aims of the research since the focus of this research was on the factors that influence attitudes and self-efficacy beliefs towards the implementation of DI. Additionally in this chapter, learning difficulties are defined and justified for being the focus of the research on teacher attitudes towards DI. To understand the research landscape of this study, this chapter begins by outlining the researcher's position and potential biases they have.

1.2 Note from the researcher: coming to the inquiry

Observations and experiences as a senior-secondary school teacher have demonstrated to the researcher that students with additional needs, such as those with learning difficulties, can fall behind in senior-secondary years. The researcher has seen many students with learning difficulties in senior-secondary schooling, struggle academically in their classes, with this challenge heightening as students move through their senior years. The researcher noted students with learning difficulties being subject counselled into subjects considered less academic than others, leading to a deficiency in inclusive education. A decrease in motivation and opportunities to learn in inclusive environments are possible causes of unsatisfactory achievement for diverse learners. Based on the researcher's professional observations and experiences, there is a need to investigate why inclusion may be failing for students with additional needs, particularly those with learning difficulties in senior-secondary school.

Furthermore, in the researcher's previous roles as Head of Learning Support (Senior School) and the Head of the South Australian Certificate of Education (SACE) for an independent school in Adelaide, the researcher educated teachers about DI and frameworks for inclusion to increase engagement with such approaches. This education was done through formal professional development (PD) and classroom observations with staff on differentiation and inclusive practises, in an ongoing and sustained measure, as well as informally through collegial conversations and support. During formal meetings and through professional conversations, the researcher noted that there are vast differences in teacher attitudes towards differentiation, with some teachers possessing a negative attitude towards differentiation and towards students with additional needs. Conversely, the researcher also observed other teachers possess a positive attitude towards

differentiation and thus differentiate for students with additional needs in an effective manner, with students finding success in their learning goals. It is this difference between teacher attitudes and application of DI that the present research aims to explore.

It is important to recognise bias (Galdas, 2017) in this research given that the researcher based their research upon the social constructionist paradigm. The researcher believes that DI is a framework all teachers should engage with, to create greater inclusivity in their classroom, not only for diverse learners but for all students. Galdas (2017) acknowledged that those who carry out qualitative research, play an integral part in the process of such research. Furthermore Galdas (2017) stated that it is not feasible or desirable for the researcher to separate themselves from the research, hence why the researcher has recognised their bias and position in this research. Current questions and perspectives towards differentiation and its uses comprise the starting point for this research.

It is important to note that this research focuses specifically on DI for students with learning difficulties as a sub-group within classrooms. This potentially causes tension as DI is for all students, not just those with learning difficulties or disabilities. Nonetheless, there is a need to investigate how DI practices may affect students with learning difficulties given their reduced educational outcomes and post-school pathways (Harðardóttir et al., 2015; Korhonen et al., 2014; Radzevičienė et al., 2019), as outlined in Chapter 2. While the exploration of learning difficulties and DI may provide insight into how students with learning difficulties may be differentiated for, it is important to recognise that DI is a practice for all students and that this study does not take away from that belief. The next section defines senior-secondary schooling in Australia, providing an overview of the various curriculum

frameworks each state follows during this schooling period. Defining senior-schooling is important, as senior-schooling frameworks differ between each of the states and territories.

1.3 Senior-secondary schooling in Australia

In Australia, senior-secondary schooling consists of Years 10 to 12 and is often referred to as upper-secondary, with Year 10 considered a transition year into senior school (Queensland Government, 2022c). Senior-secondary forms part of high school, which consists of Years seven to 12 in Australia, thus, senior-secondary schooling forms a sub-group in high school. Senior-secondary education has been chosen for this research because "a critical challenge faced by secondary schools is meeting the needs of students who bring with them experiences of academic failure and subsequent maladapted self-belief systems" (White, 2020, p. 2); hence, there is a need to investigate frameworks that allow teachers to address this challenge in an effective manner. Smale-Jacobse et al. (2019) conducted a systematic review into the literature on DI and secondary schooling and found that there are few high-quality studies on the effectiveness of teacher-led DI in secondary education. This study aimed to contribute sophisticated understandings of teacher experiences with DI in senior-secondary settings.

Each Australian state and territory has a different curriculum for teaching senior school students, with each state delivering their own certificate of education or completion. These are found below in Table 1. Each state and territory is responsible for the delivery and reporting of their certified curriculum to students.

Table 1

Senior-Secondary Curriculum Frameworks in Australia

State	Senior-secondary Curriculum Framework
New South Wales	Higher School Certificate
Australian Capital Territory	Australian Capital Territory Senior-Secondary Certificate
Northern Territory	Northern Territory Certificate of Education and Training
Queensland	Queensland Certificate of Education
South Australia	South Australian Certificate of Education
Tasmania	Tasmanian Certificate of Education
Victoria	Victorian Certificate of Education and Victorian Certificate of Applied Learning
Western Australia	Western Australian Certificate of Education

Approximately 86 schools (International Baccalaureate Organization, 2022a) across Australia also offer the International Baccalaureate Diploma Programme (IBDP; International Baccalaureate Organization, 2021) which is an internationally recognised qualification for students aged 16–19 and typically starts in Year 11 of senior-secondary schooling. In contrast, students in Year 10 follow the Australian Curriculum (AC) (Australian Curriculum Assessment and Reporting Authority, 2022a). Therefore, students in Year 10 largely study the AC and move into one of the state or territory curricula in Year 11 and 12 or IBDP program, if offered by the school.

This research focused specifically on the use of three curriculum frameworks based on the Australian state (SA or QLD) from which the teacher participants came from: the SACE (Government of South Australia, 2021), the Queensland Certificate of Education (QCE; (Queensland Government, 2021) and the IBDP (International Baccalaureate Organization, 2021). The research focused on these three curriculum

frameworks due to the purposeful sampling, which recruited teacher participants from only three Australian states and territories.

The SACE "is a modern, internationally recognised secondary school qualification designed to equip students with the skills, knowledge, and personal capabilities to successfully participate in our fast-paced global society" (Government of South Australia, 2021, para.1). The SACE is overseen by the SACE Board, which is a statutory authority of the South Australian Government. The SACE is a two-stage certificate that requires students to complete 200 credits, where subjects are worth either 10 or 20 credits. Fifty of the 200 credits include compulsory requirements, while students fill the remaining credits from stage 1 and 2 subjects (Government of South Australia, 2021) – stage 1 subjects are mainly studied by Year 11 students, and stage 2 subjects are primarily studied by Year 12 students.

Similarly, the QCE is "internationally recognised and provides evidence of senior schooling achievements" (Queensland Government, 2022a, para.1). The QCE allows students to select a wide range of learning options to suit their interests and career goals. To earn the QCE, students must receive 20 credits from a range of subjects and courses, vocational qualifications, or other recognised studies. Twelve of the required 20 credits must be from completed core courses of study, while the remaining eight can be from other study combinations (Queensland Government, 2022b).

In contrast to the SACE and QCE, the IBDP is an assessed programme implemented around the globe in approximately 160 countries (International Baccalaureate Organization, 2022b). The IBDP curriculum is composed of diploma core subjects and six subject groups (International Baccalaureate Organization, 2021). Students complete the three core subjects, namely 'Theory of knowledge',

‘The extended essay’ and ‘Creativity, Activity, Service’ along with subjects across the six subject domains. These are:

- Studies in language and literature
- Language acquisition
- Individuals and societies
- Sciences
- Mathematics
- The arts

The next section defines and reviews inclusion and inclusive education in Australia and outlines what an inclusive education consists of. Defining inclusion sets the basis for DI, which is one framework and philosophical approach to teaching that can achieve inclusive education.

1.4 Inclusion & inclusive education

Two significant current challenges in education are how to respond to student diversity (Gheyssens et al., 2020b; Pui, 2017) and how to create successful and inclusive environments to promote academic achievement (Dack & Triplett, 2020; Gheyssens et al., 2020b; Pozas & Schneider, 2019; Smets & Struyven, 2020). Inclusive education has recently become firmly embedded within the educational discourse and legislation of Australia (Boyle & Anderson, 2020) to ensure that people with disabilities have access to an equitable education (Meehan, 2016). Boyle and Anderson (2020) argued however, that while inclusive education can be seen in Australian legislation, that what constitutes inclusive education is not straightforward, but is rather debatable in definition and construction. Richler (2012) concisely expressed that “inclusive education is good education” (p. 177), thereby

connecting a ‘good’ education with an inclusive one. This indicates that when education is not inclusive—where not all students would likely be welcomed in their school setting or supported in their learning—that education may not be as effective for all students as what it could be. Furthermore, as per the United Nations Committee on the Rights of Persons with Disabilities (CRPD; (2016), inclusive education is a fundamental human right, and everyone is entitled to equal education through the elimination of barriers that restrict equal access. Similarly, Ydo (2020) outlined that inclusion and inclusive education is a collective responsibility for all, meaning that all teachers and school staff are responsible for ensuring that all students are supported to learn, regardless of their diverse needs. Furthermore, Ydo (2020) outlined that everyone needs to contribute to inclusive education and that responsibility does not fall on a select few in schooling sites. In Australia, however, Australian states and territories independently provide their own policy and legislation on inclusive education, leading to a myriad of disparities in such policy and legislation (Beamish et al., 2022).

This research utilises Ainscow’s (2020) definition for inclusion, which is a seminal work in this field and is based upon the index for inclusion used to specifically guide schools in inclusive education (Booth & Ainscow, 2002). According to Ainscow (2020), inclusion and inclusive education occur through *presence, participation, progress (in achievement and learning)* and a *sense of belonging* (Ainscow, 2009). Presence involves students not just being physically present within the classroom but also being provided with the necessary support to access the curriculum and learning activities. Similarly, Ainscow (2009) outlined that participation means that students are appropriately supported to participate in a meaningful way. Progress means that all students have the right to learn and make

progress, regardless of their starting point. Finally, teachers have a responsibility to ensure that students develop a sense of both emotional and social belonging in the classroom for the environment to be considered inclusive.

Secondary educators have been described as being less positive towards inclusive education compared to teachers of younger students (Mastropieri & Scruggs, 2001; Ross-Hill, 2009; San Martin et al., 2021). This raises the question as to why this might be the case and creates concerns over inclusion in senior-secondary education—latter portion of secondary education in Australia. Costello and Boyle (2013) noted that many secondary teachers do not feel adequately trained in promoting inclusive education, leading to further concerns over how teachers are creating inclusive classrooms if they do not feel adequately trained in doing so. DI is a framework and philosophy that promotes inclusive education (Jarvis, 2015) and presents a suitable means for equipping teachers to promote inclusive education.

DI is not the only successful pedagogical framework to address learner diversity or SWANs. Universal Design for Learning (CAST, 2018b) has successfully provided a proactive approach by addressing learner needs before students even enter the classroom (Basham et al., 2020). Universal Design for Learning is a set of guidelines that offer "concrete suggestions that can be applied to any discipline or domain to ensure that all learners can access and participate in meaningful, challenging learning opportunities" (CAST, 2018a, para. 4) and focuses on student engagement, representation and action and expression.

Similarly, the explicit instruction pedagogical model, which is supported by significant research, has potential in positively addressing the needs of students with learning difficulties (Polo-Blanco & González López, 2021; White, 2020). Explicit instruction incorporates routine, modelling and guided practice and focuses on the

process of how content and skills are taught (Riccomini et al., 2017). While Universal Design for Learning and explicit instruction have the potential to cater to student needs, the aim of this research was to investigate DI as DI has been shown to address learner diversity for specific individuals, groups, or the whole class (Tomlinson et al., 2003) and has a positive effect on student achievement in primary settings (Deunk et al., 2018). Similarly, prior research on secondary teachers has shown that many teachers value the use of DI (Letzel et al., 2022), however, this has not been established in senior-secondary settings in Australia.

Furthermore, as certain instructional methods/approaches (e.g., DI framework [Tomlinson, 2014]; Universal Design for Learning model [CAST, 2018]) are necessary for creating inclusive classrooms, teacher attitudes towards DI implementation and use could be explored in more detail to determine what attitudes are more favourable towards inclusion. In addition, human behaviour is regulated by an individual's self-belief (Bandura, 1989), and given that self-efficacy was identified within the conceptual framework, discussed in Chapter 2, it is important that the link between self-efficacy and teacher attitudes be explored further, as a means to discover favourable attitudes that lead to inclusive education.

The following section introduces the framework of DI, which is the focus of this research. DI is one framework teachers can use to create inclusive education, allowing teachers to be inclusive and equitable in their classrooms. Hence DI, inclusion, and inclusive education are inextricably linked.

1.5 Differentiated instruction

Differentiated instruction (DI) is a commonly used pedagogical framework and approach that aims to respond effectively to the needs of diverse learners

(Dulfer, 2019; Frankling et al., 2017; Pozas et al., 2019). DI does this by addressing the individual needs of each learner and acknowledging the differences between them, ensuring that teachers understand student readiness, utilise student interests, allow students to engage with content, and adapt to learners' preferences to increase motivation and engagement (Tomlinson, 2014, as cited in Sharp et al., 2018). Furthermore, DI allows teachers to plan strategically while operating within a common curriculum framework and is considered as such when teachers deliberately plan adjustments to content, process, and product based on student readiness (Tomlinson, 2014; Tomlinson & Borland, 2022) to facilitate student learning (Smale-Jacobse et al., 2019).

Historically, DI has been seen as a move towards greater inclusion (Black et al., 2019). Schwab et al. (2019) asserted that inclusion reduces barriers to participation and requires that teachers adapt to learner needs. Considering the definitions of both DI and inclusion, DI promotes inclusion and inclusive practices. While many conceptual and theoretical models have created variations of the DI framework, the justification for the use of the framework by Tomlinson (2014) is reviewed further into this chapter, whilst highlighting how this research contributes to the DI model by Smit and Humpert (2012). The history of DI is first reviewed, to give context to how such a framework arose, and is connected to inclusion.

1.5.1 The history of differentiated instruction

DI has been in existence for nearly two decades (Sun & Xiao, 2021) and was originally described as a method for teachers to move away from the one-size-fits-all approach to learning, allowing students who were 'academic outliers' to access the curriculum (Tomlinson, 1995). Much of the early literature on DI was orientated

towards the teaching of gifted learners (Tomlinson, 1995), which can be traced back to Ward (1961) who described the need for 'differential learning' in the United States (US) for students identified as gifted. In a study by Tomlinson (1995), she described the tendency for teachers to 'teach to the middle' and suggested that very few teachers make modifications to cater for their gifted learners. This finding was echoed in further research by Tomlinson et al. (1996) the following year, which investigated teacher understanding of collaboration and communication in gifted education. Tomlinson outlined, "Gifted education has to remind us [as teachers] that it is not acceptable to treat everyone the same" (Tomlinson et al., 1996, p. 167), and thus the premise of the DI framework, which was created some years later, was born.

DI did not only originate from research in gifted education—DI also arose from a range of social constructivist theories (Magableh & Abdullah, 2021; Monk et al., 2013; Pozas et al., 2019; Suprayogi et al., 2017). One of these was Vygotsky's Zone of Proximal Development (ZPD) (Vygotsky, 1978). Vygotsky (1978) described the ZPD as the level of potential development a learner can have when guided correctly by a peer or adult, which sits between what a student can do comfortably and what a student cannot do unaided. Morgan (2014) described this as being similar to the principles of DI, whereby teachers teach and assist learners who have difficulty grasping a concept and thus allow them to understand and proceed at their own pace. Similarly, Alstete et al. (2021) stated that it is Tomlinson et al.'s (2003) approach to DI according to students' 'readiness'—how ready a student is to undertake a task or understand a concept—that best correlates to the ZPD. This concept suggests that the ZPD may have informed part of Tomlinson's DI framework (Tomlinson, 1995, 1997; 2000; 2001; 2013; 2014).

Historically, DI in its entirety reflects many other factors of learning. For example, the overall DI framework, which includes differentiated teaching according to students' learning profiles, incorporates the theory of multiple intelligences by Gardner (1983), as a key component. In Tomlinson's latest book, she argued the criticism of multiple intelligences, since removing reference to DI and multiple intelligences (Tomlinson & Borland, 2022). Without careful consideration for students' learning needs and preferences, DI would be pointless. Tomlinson (1999) and Tomlinson et al. (2008) said this herself when stating that DI addresses learning styles by employing multiple modes of instruction and assessment to meet learning needs (Tomlinson, 1999; 2014).

Furthermore, Karimi and Nazari (2021) argued that the DI model by Smit and Humpert (2012)—another key framework in this research—has parallels with the ZPD. For example, attending to students' differences requires teachers to understand where students are at with their learning. Therefore, both the ZPD and the multiple intelligences theory have each historically contributed to elements of DI, reflecting the fact that multiple educational theories have played a role in the development of DI, not just a single theory alone.

Both the DI framework by Tomlinson (2014) and DI model by Smit and Humpert (2012) are reviewed below, as they form the basis of this research study. It is important to note, however, that these are not the only two frameworks for DI. While the DI framework by Tomlinson (2014) is more well known, Westwood (2015) adapted Tomlinson's framework to stress the "simplicity principle" (p. 162) as a way of making DI more achievable. Interestingly, in his earlier work, Westwood (2001) disputed the DI framework, stating:

> Should we not be helping teachers develop skills in teaching the same material effectively to all students, rather than recommending that they give different work to different individuals as a kind of difficult-to-achieve, multilevel teaching which perpetuates inequalities and fragments the curriculum? Isn't it more inclusive for all students to be doing the same work, with differentiated amounts of assistance? (Westwood, 2001, p. 10).

Whilst Westwood makes a strong point about what is effectively DI through process, such as that of adjusting teachers' instructional ability, one could argue that Westwood's approach to DI does not allow for full inclusion. For example, inclusion is about equal opportunity and equity in education (Damianidou & Phtiaka, 2018; Sheehy et al., 2019), whilst ensuring access and meaningful participation for all learners (Sharp et al., 2018), which may refer to students being able to produce different products or assessments. Furthermore, as Sharp et al. (2018) put forth, inclusion should be about whole-school approaches that concentrate on assessing and responding to students' specific learning needs in a flexible manner, which thus, counteracts part of Westwood's earlier views in teaching the same material to all students.

Westwood (2001) posed these views on DI over twenty years ago, during a time when, as Sun and Xiao (2021) reviewed, was particularly focused on the effects of implementing DI and the impact this had on teachers. This point could attribute why Westwood took this narrower view, given that he found that the reality of implementing DI at the time, proved difficult (Westwood, 2001). Since then, the inclusion movement has gained, and continues to gain, significant movement (Beamish et al., 2022; Woodcock et al., 2022), with student populations becoming more diverse and varied and this can be seen in the various Australian policies and

legislation discussed in Chapter 2. DI is also reflected in more current research by Westwood (2015), reflecting a shift in views towards DI from his original research as he further adapted the DI framework by Tomlinson (2014) as he states that:

> Meeting students' special educational needs successfully in mainstream classrooms usually requires that subject matter, learning activities, teacher procedures, resource materials and patterns of classroom organisation must often be adapted or modified. (Westwood, 2015, p. 161)

Westwood (2015) adapted Tomlinson's (2014) DI framework to extend to five ways teachers can differentiate their classrooms for student success. He outlined that teachers could differentiate content, resources, instruction, student output and assessment. The historical perspective on DI has allowed it to become a philosophy and praxis (Coubergs et al., 2017; Gibbs & Beamish, 2020) whereby the one-size-fits-all approach has become seen as a drawback in teaching (Sun & Xiao, 2021), and Tomlinson (2000) used this idea to describe DI, rather than DI being a teaching strategy itself.

Sun and Xiao (2021) recently reviewed two-decades of literature (2000-2020) on DI after the inception of the framework by Tomlinson (1999), and discovered that there have been three main phases in its development (while also noting that research outputs on DI are increasing). Between 2000 and 2007, DI research largely focused on implementation, whereas from 2008 to 2014 the emphasis was on subject-specific teaching and the role of technology. The years 2015 to 2020 saw an increase in literature investigating teacher attitudes and practices regarding DI, particularly with reference to teachers' PD. Even more recent research has investigated teacher attitudes, however, by delving deeper into the meaning of DI in various contexts (Zerai et al., 2021), and this research aimed to

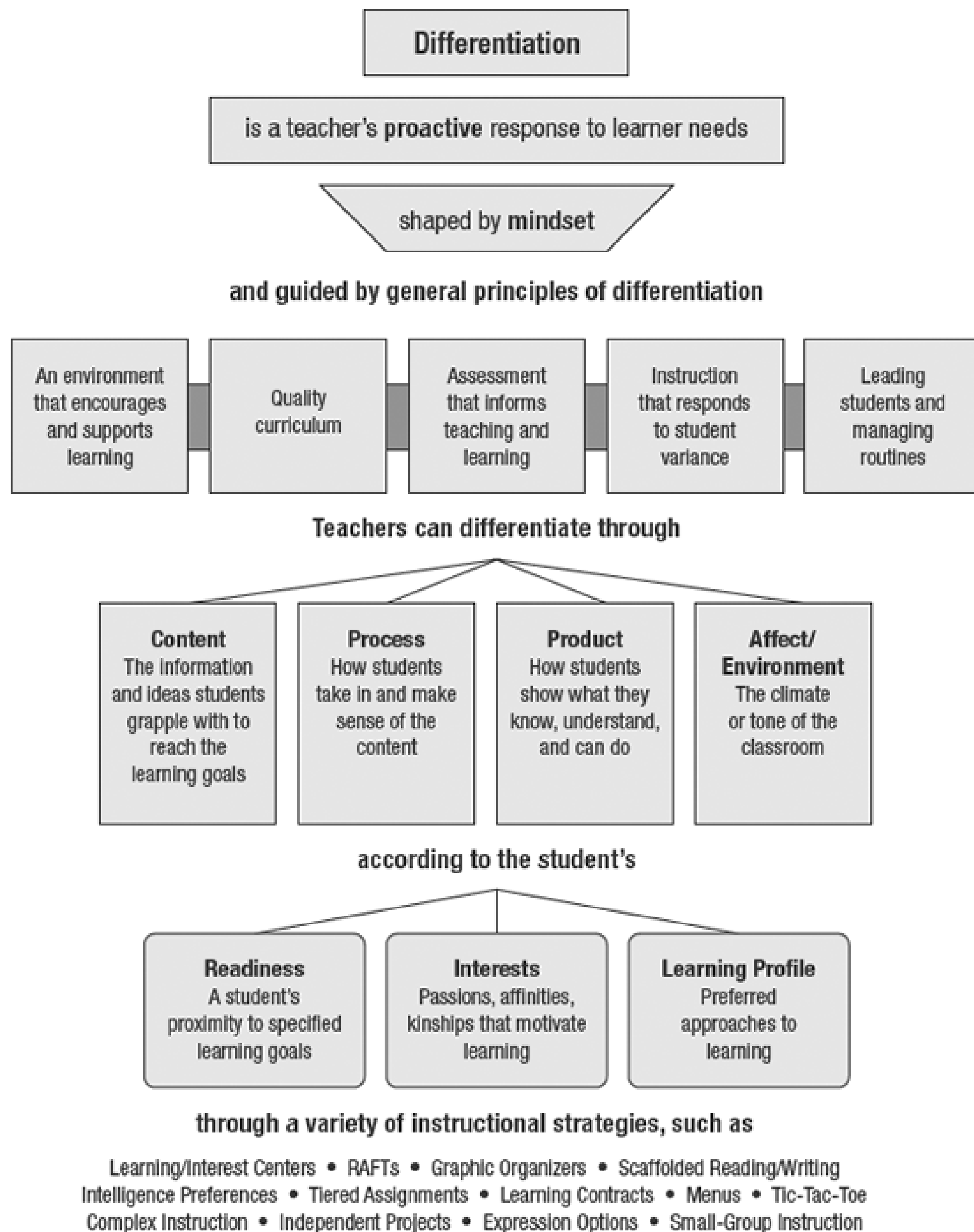
continue this trend by investigating the deeper meaning behind factors that impact teacher attitudes towards DI in senior-secondary contexts—an area not previously investigated. In the subsequent sub-section, Tomlinson's (2014) framework for DI is defined and justified. There are many models and frameworks for DI, however, Tomlinson's (2014) framework is utilised in this research as it is one of the most understood frameworks in the field of education.

1.5.2 Tomlinson's (2014) framework for differentiated instruction

While there are multiple models for DI, such as that of Westwood (2016) and Smit and Humpert (2012) discussed earlier, this research focused on DI through the lens of Tomlinson (2014), who proposed that teachers can accommodate student diversity in the classroom and apply differentiation to student learning goals through content, product, process, affect/environment, or a combination of the four. Furthermore, Tomlinson (2014) argued that for DI to work successfully teachers need to be positive and enthusiastic towards its implementation (Gibbs & Beamish, 2020; Gibbs & McKay, 2021). The framework itself has progressed over time since its inception and, according to Gibbs and Beamish (2020), has strong links with Universal Design for Learning (CAST, 2018b). The contemporary DI framework by Tomlinson (2014) can be seen in figure 1 and is discussed below.

Figure 1

Tomlinson's (2014) Framework for Differentiated Instruction



From *The Differentiated Classroom: Responding to the Needs of All Learners* (p. 20), by C. A. Tomlinson, 2014, United States of America: P Association for Supervision and Curriculum Development. Copyright 2014 by Association for Supervision and Curriculum Development. Copyright. Reprinted with permission.

One of the features of DI is content differentiation, which consists of the essential knowledge, understanding and skills that are being taught (Santangelo & Tomlinson, 2012; Tomlinson, 1997). Teachers differentiate content based on how ready students are to learn, their specific interests, or information supplied by learning profile characteristics. Dulfer (2019) stated that differentiation by content is about adapting the content so that it is relevant to each student's preferred approaches to learning, and the methods used by teachers to impart knowledge and skills (Gibbs & McKay, 2021). Magableh and Abdullah (2021) implemented an exploratory sequential quasi-experiment, implementing DI strategies geared towards content with one group, while another was taught using a one-size-fits-all approach. These authors found that the group taught with DI was effective in increasing reading instruction and reflects one of the ways in which teachers can differentiate through content. The end goal for differentiation by content is to connect the learner with the content being taught, not simply to cover the content (Tomlinson, 2013).

In contrast, Santangelo and Tomlinson (2012) defined differentiation by process as the means by which students make sense of content, with the differentiation of that process involving activities that allow students to personalise the content. This often takes the form of flexible grouping strategies (Tomlinson, 2014) such as mixed ability, same ability, or interest and learning profile characteristic groupings.

Similarly, differentiation by product refers to how students demonstrate their understanding (Dulfer, 2019), and differentiation by product is realised through teachers setting tasks where students can show their learning in a variety of ways and which allow them to work at different speeds. The factors of content, process and product are similarly treated in DI, providing a "different avenue to acquiring

content, the processing or making sense of ideas, and to develop products so that each student can learn effectively" (Tomlinson, 2001, p. 1).

Finally, differentiation by affect/environment refers to the classroom climate and emotions and how these impact student learning (Gibbs & Beamish, 2020; Gibbs & McKay, 2021). Tomlinson (2014) argued that teachers can differentiate the tone of the classroom in a variety of ways, such as by ensuring that students feel welcomed and valued and helping students recognise that the classroom is a safe space to learn —with both successes and failures. Similarly, Santangelo and Tomlinson (2012) extended this further, stating that a differentiated learning environment can include adjustments to the physical space of a classroom, including arranging and rearranging the classroom to promote collaboration and cooperation.

Differentiation can involve a combination of the aforementioned ways but can be further informed by a range of factors related to students. For example, Tomlinson and Imbeau (2010) defined readiness as a student's current proximity to the specified content and learning profile, as a student's preference for taking in, exploring and representing information. While learning profile was prominent in the text by Tomlinson (2014), learner preferences is the preferred term in Tomlinson's latest research (Tomlinson & Borland, 2022) In addition, Nepal et al. (2021) argued that contemporary classrooms are complex and requires teachers to address student learning profiles, allowing them to develop as critical thinkers. This notion highlights the importance of learning profiles within Tomlinson's DI framework. Furthermore, Tomlinson and Imbeau (2010) defined interest within the DI framework, as to what engages the curiosity and interest of the students, allowing them to be fully involved in their learning. The next sub-section reviews the DI model by Smit and Humpert (2012), which shares similarities with the DI framework

by Tomlinson (2014). This model has also been reviewed as it includes reference to attitudes, which were investigated in this research.

1.5.3 Smit & Humpert's (2012) model for differentiated instruction

While this research focused on the framework of Tomlinson (2014) as it is more widely known, this research extends the model of DI by Smit and Humpert (2012), as their model has a focus on attitudes towards implementing DI. According to Gibbs and Beamish (2020), the model by Smit and Humpert (2012) shares three of the four curriculum elements proposed by Tomlinson (2001) and is an extension of her framework. The four elements that are central to the framework by Smit and Humpert (2012) are: (a) attending to students' differences; (b) utilising formative assessment to identify the next learning sequence; (c) modification of process, content and/or products, according to learner needs; and (d) collaboration embedded within the learning process. Smit and Humpert (2012) outlined that a constructivist attitude towards learning is key for teachers, allowing them to plan effectively for students' individual needs—which connects well with the social constructionist view the researcher took in this research—thus, allowing the researcher to draw upon this model, and that of Tomlinson's (2014) framework. This research aimed to fill a paucity in research to determine the factors that shape teacher attitudes, which may further inform teacher motivation towards implementing DI and the process involved with attitude formation, given that the framework is a process-orientated model (Gibbs & McKay, 2021). As the DI framework by Smit and Humpert (2012) discussed the importance of teacher attitudes, it is important that attitudes be defined, which occurs in the following section. Furthermore, given that this research focused

on exploring teacher attitudes towards the provision of DI, thus, the historical background of what constitutes an attitude, is also reviewed.

1.6 Defining attitudes

Given that attitudes are essential elements in professional competence and are a predictor of how successfully an inclusive school system is implemented—such as the DI framework (Börnert-Ringleb et al., 2020)—it is crucial that the concept of attitudes be defined, to develop relevant measurement procedures (Kunz et al., 2021). The absence of a consensus over the definition of attitudes throughout the years, however, has led to unclear descriptions and multiple interpretations of what constitutes an attitude.

In the 1970s, Fishbein and Ajzen (1975) attempted to present a coherent and systematic definition of attitudes based on the diverse literature on the subject and, according to a review by Hill (1977), they did this in a rigorous way and to a commendable degree. Fishbein and Ajzen (1975) defined attitudes as "a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object" (p. 6) and stated that there were three basic features of attitudes; 1) attitudes are learned, 2) attitudes predispose an action, and 3) actions may be favourable or unfavourable.

A significant theoretical model followed in the 1980s; Ajzen (1985) postulated the Theory of Planned Behaviour (TPB), which was used to plan and predict behaviours and stated that behaviours were determined by a combination of factors, one being attitudes towards the behaviour itself. The TPB has become a cornerstone in education, used to research teacher attitudes and behaviours towards specific educational principles, of which this research study is similar (Hellmich et al., 2019).

Prior to the research by Ajzen (1985), there was a consensus that attitudes directly affected behaviour. Whilst somewhat factual, the TPB also introduced the concept of 'intention', whereby attitudes create intention, which leads to a certain behaviour. This intention-behaviour relation suggests that intention precedes behaviour and that intention can be an indicator of behaviour only just prior to the performance of the behaviour itself (Ajzen, 1985). For example, intention for differentiating could only be measured in action research, which was not a focus of this study.

One of the most cited models for defining attitudes, however, includes the ABC model developed by Eagly and Chaiken (1998) and this forms the basis of how attitudes are defined in this research. The ABC model is divided into three components: (A) affective, (B) behaviour and (C) cognitive. In the context of this research, the affective component refers to teacher attitudes towards the framework of DI. The behavioural component refers to teachers' perceived ability to implement and use the DI framework in their senior schooling contexts, while the cognitive component refers to teachers' self-efficacy towards said implementation. This framework lends itself well as the focal point for this research as it defines both attitudes and self-efficacy, which are the central points of this research. To not exclude other influential factors that may impact upon attitudes, beliefs are defined in the following section. This research did not utilise a model for beliefs, as beliefs were not the focus of this research, however, defining beliefs allowed the researcher to be open to the possibility that beliefs may be a factor that influences teacher attitudes and/or self-efficacy.

1.7 Defining beliefs

It is important to note that teacher beliefs and teacher self-efficacy are differing concepts, with self-efficacy commonly examined through Bandura's social cognitive theory (Bandura, 1989). This is discussed further on in the literature. While self-efficacy is still considered a belief—a belief in oneself—a review of self-efficacy regarding differentiated instruction is discussed in the literature review in Chapter 2. It is important that beliefs are reviewed, as focusing on attitudes alone runs the risk of excluding other features that may be just as influential on behaviour as attitudes (Kennedy & Kennedy, 1996). Therefore, beliefs are discussed in this chapter.

In the early 1990s, Pajares (1992) reviewed the work of prominent researchers in the field of beliefs, determining that the concept of beliefs was a "messy construct" (p. 307) with beliefs being defined in a variety of ways. Thus, research into teacher beliefs can prove challenging, given the variety of meanings behind the concept.

In contrast, Richardson (1996), who investigated the definition of beliefs based on research by anthropologists, philosophers, and social psychologists, defined beliefs as "psychologically-held understandings, premises or propositions about the world that are felt to be true" (Richardson, 1996, p. 104). An extension of this definition within education is that beliefs constitute teachers' everyday professional actions (Griful-Freixenet et al., 2021; Ritter et al., 2019), such as actions towards students with learning difficulties, actions related to DI, or both, as found in this research study. In contrast, some of the literature makes no distinction in their definition of beliefs, with other constructs. For example, Woodcock and Jones (2020) examined the relationship between self-efficacy and teacher beliefs, and while they recognised that "a teacher's attitudes, beliefs and concerns…represent

important constructs" (p. 585), they do not provide a distinction between these constructs, highlighting overlap between the two concepts.

By way of an alternative, Keppens et al. (2021) made a clear distinction in their research between beliefs and self-efficacy beliefs with regard to inclusive education, whereby teacher beliefs can reflect issues related to "learners, knowledge, teaching components, themselves, parents, instruction and the organisational context" (Keppens et al., 2021, p. 4). Conversely, Kunz et al. (2021) took a narrower approach to their definition of beliefs, stating that teachers' beliefs are largely focused on school-related assessment patterns and lesson design. This suggests that teacher beliefs can be shaped and defined by a multitude of factors.

The various perspectives on beliefs highlights contention between what does and does not constitute a belief. Hence, it can be said that there is a link between beliefs and self-efficacy, which is why this research sought to define what beliefs are, given that they may play a potential role in teachers' implementation of DI.

The following section sought to define the term learning difficulties, which, like beliefs, has confusion surrounding terminology and definitions behind what does and does not constitute a learning difficulty. Exploring teacher attitudes towards DI, with a focus on differentiating for students with learning difficulties, was pertinent to this research, thus defining learning difficulties was important for a common and shared understanding.

1.8 Learning difficulties

It is important to note, that the researcher has honoured the terminology used by authors in the reviewed research, and that a variety of terms are used to describe students with learning difficulties. Confusion over the term and what constitutes

“learning difficulties” has been well documented. Learning difficulties is the preferred term in Australia (rather than “learning disabilities”), used to describe the group of students who require extra assistance with their schooling (Elkins, 2002; van Kraayenoord & Elkins, 2004). Skues and Cunningham (2011) and Todd et al. (2022), however, stated that there is not only confusion behind the terminology related to learning difficulties and learning disabilities but that there is an absence of a consensus and agreement about how to define the two terms. This inconsistency has often created a significant problem for teachers who work in Australian schools, as they do not have the knowledge to discriminate between the two (Skues & Cunningham, 2011; Todd et al., 2022). This research utilises the term ‘learning difficulty’ as its primary term to describe students who have challenges in their learning. While there are many different terms used throughout this thesis, learning difficulties is considered the all-encompassing term. The researcher highlights throughout this thesis, the inconsistent terminology used to describe learning difficulties, learning disorders, and learning disabilities.

Scott (2004) outlined, a deficit in consensus of what constitutes a learning difficulty can be dangerous and lead to incorrect labelling of students, while also being a barrier to identifying students who may need additional support. Scott (2004) argued that the lack of consensus can make supporting students challenging for teachers to select an appropriate intervention for students who experience difficulties. While there are discrepancies, this research focused on the term ‘learning difficulties’, given that students with a learning difficulty are those who struggle with their academic achievement (Elkins, 2000; Todd et al., 2022). Furthermore, Hardy and Woodcock (2014) further stated that the term used in Australia is that of ‘general learning difficulty.

Students with learning difficulties lack knowledge and skills in numeracy (van Kraayenoord & Elkins, 2004) and literacy (Elkins, 2000; Rohl & Milton, 2002) with Elkins (2000) further stating that these weaknesses, when not attributed to an intellectual, physical or sensory disability, are considered learning difficulties. Westwood (2004), however, argued that students with learning difficulties can include those with a sensory impairment—thus, further highlighting the confusion behind the term. Westwood (2004) and Krämer et al. (2021) described a variety of influences on the development of a learning difficulty such as below average intelligence, emotional or behavioural problems, loss of confidence, and many other factors.

Elkins (2002) echoed many of Westwood's assertions saying that learning difficulties are best understood to be *experiences* of students and that, when classroom and additional supportive teaching does not assist, the student is more likely to experience a learning disability. Similarly, Thomas and Whitten (2012) used the term 'learning difficulties' in their study, as they too recognised that learning disabilities had a neurological focus. AUSPELD (2021), which is a nationally recognised organisation that "represent[s] and support[s] the many thousands of children and adults struggling with…learning difficulties…throughout Australia" (para. 1) mirrored much of Elkins (2002) and Westwood (2004) research but provided a succinct definition in their guide to parents. They stated that:

> Children with learning difficulties underachieve academically for a wide range of reasons, including factors such as: sensory impairment (weaknesses in vision or hearing); severe behavioural, psychological or emotional issues; English as a second language or dialect (ESL or ESD); high absenteeism; ineffective instruction; or, inadequate curricula. These children have the

potential to achieve at age-appropriate levels once provided with programs that incorporate appropriate support and evidence-based instruction. (AUSPELD, 2018, p. 4)

Therefore, learning difficulties are broader than learning disabilities and based on a range of student experiences, which can be successfully altered when adjustments are made to the classroom program, but their difficulty may not be attributed to neurological concerns. Interestingly, Thomas and Whitten (2012) further noted that the term 'learning difficulties' was preferred in Adelaide, South Australia, where their study was located and which is the location of majority of the teacher case-studies within this research. While the definition for learning difficulties varies, and can often include a broad range of factors, this research draws upon literature related to both numeracy learning difficulties and literacy learning difficulties.

Numeracy, which is the ability to understand and use mathematical strategies and numbers (van Kraayenoord & Elkins, 2004) is a fairly recent term used to place emphasis on mathematical concepts used in everyday life (Gunn & Wyatt-Smith, 2010). According to Mulligan (2011), numeracy difficulties can be related to learning problems such as that of poor cognitive functioning and attention and information processing difficulties and can often be termed dyscalculia (Williams, 2013). Much like the inadequacy of an agreement between the terms learning difficulty and learning disability, there is contention between whether dyscalculia fits within one of these categories.

Reeve (2019) argued that there is a need to distinguish the differences between dyscalculia and mathematical learning difficulties in Australia, which places further contention between what constitutes learning difficulties and learning

disabilities. AUSPELD (2018), however, which are one of the few organisations in Australia that recognise dyscalculia, categorise dyscalculia as being a Specific Learning disability (SLD), thus placing SLD within the disability category, not the learning difficulty category. Hence, while learning disabilities may be a smaller group of students within the learning difficulties banner. Learning disabilities, however, are not the focus of this study, and therefore, dyscalculia itself is not at the core of this research.

In contrast, working memory is a key indicator or mathematical competence (Passolunghi & Costa, 2019), thus, when students have difficulties with their working memory, they are likely to have difficulties with mathematics and numeracy. In Australia, there is evidence to suggest that many students have difficulties in numeracy, which typically carry into senior-secondary schooling. For the 2021 Year nine National Assessment Program – Literacy and Numeracy Assessment ([NAPLAN], 2021) results, 3.7% of students were below national minimum standard in numeracy. This highlights the importance of finding ways to increase student achievement, particularly if students are entering senior-secondary schooling with educational deficits. DI has the potential to cater for such diversity (Dack & Triplett, 2020; Gheyssens et al., 2020b).

In contrast to numeracy, literacy, in its conventional form, are reading viewing, speaking and writing behaviours and literacy is continually changing within our diverse, globalised and technological world (Lawson et al., 2012). Yet, in Australian schools, the conventional form of literacy is what governs our school practice (Elkins, 2002). Solid literacy skills, particularly in reading, are required for academic success in primary and secondary education (Meeks et al., 2020) and thus when learning difficulties in literacy occur, academic success in then compromised.

Furthermore, Meeks et al. (2020) argued that this impacts student learning in all curriculum areas, leaving students without the necessary literacy skills to enter the workforce and can also impact their achievement and engagement at school.

NAPLAN results for Year nine students in 2021 suggest that many students across Australia have difficulties in literacy, in one or a variety of areas. While NAPLAN is considered part of secondary schooling and not senior-secondary schooling, it can be said that students can enter senior-schooling with deficits in their literacy and numeracy skills (White, 2020) placing them behind their peers as they enter senior-schooling. The Australian Curriculum Assessment and Reporting Authority (2021) NAPLAN data for 2021 showed that 16.2% of students were below national minimum standard in writing, while 7.3% of students were behind in spelling. Similarly, 10.7% were below national minimum standard in grammar and punctuation, while 8.7% were below in reading. Thus, there is a significant need to find ways that teachers can address students' literacy learning difficulties in the senior-secondary classroom, particularly as students arrive in senior-schooling one year after NAPLAN testing. This notion is explored further in Chapter 2, that reviews outcomes for students with learning difficulties. The following section outlines the aims and objectives of the research, based on the defined concepts discussed earlier in this chapter.

1.9 Aims and objectives of the research

Given that there are challenges in creating successful and inclusive learning environments, the aim of this research was to explore the factors that may influence the provision of DI. In particular, where the implementation of DI is aimed at enhancing the outcomes of students with learning difficulties. DI was selected as this

framework has the potential to cater for individual students' needs, with previous research highlighting the success of such a framework in addressing student variability. Currently, in Australia, inclusive education is on the agenda of all state governments (Beamish et al., 2022) and all students, no matter their learning difficulties or disabilities, are entitled to receive an equitable and socially-just education, alongside their peers (Woodcock et al., 2022). Thus, exploring how teachers can achieve this, is crucial in ensuring such equitable and socially-just education occurs.

Students who struggle to achieve the general curriculum standards for their grade level, who are students with additional needs (SWANs; (Pozas & Schneider, 2019), may not be given the same post-graduation options as students without additional needs (Whittle et al., 2019). Teachers' knowledge and skills influence their instruction of students with additional needs (Jarvis et al., 2016); therefore, this research investigated teacher attitudes and dispositions as a way of exploring the factors that influence teachers' knowledge and skills and their approach to teaching and supporting different students.

Furthermore, this research aimed to investigate teacher attitudes towards, and willingness to use DI to create inclusive classrooms that cater to learner diversity, which, according to Sharp et al. (2018) has been a challenge in research on DI over the past few years. Sannen et al. (2021) stated that teachers who have negative attitudes towards inclusion will not be inclined to implement inclusive practices, yet a positive attitude towards inclusion is also insufficient for teachers to engage in inclusive practices. Hence, teachers may be more likely to promote inclusivity when they have a positive attitude towards both inclusion (Holmqvist & Lelinge, 2021) and DI. Whittle et al. (2019) argued that pedagogical choice, enactment of the

curriculum and assessment strategies are factors that correlate directly with student success. Research by Whittle et al. (2019) noted that positive teacher attitude is important in increasing student success.

Based on these points, determining the importance and influence of factors that impact teacher attitudes towards the use of frameworks and methods promoting inclusion is crucial to the success of students with learning difficulties. DI, as a framework for inclusion, has been proven to have a positive effect on student success (Valiandes, 2015; Tulbure, 2011 as cited in Schwab et al., 2019). Given that much of the research on differentiation has taken place in the primary and middle school contexts (Dulfer, 2019), there is a need to investigate how DI attitudes and dispositions transfer into the practice of DI within the context of senior-secondary schooling (Frankling et al., 2017; Schipper et al., 2020). The following section justifies the significance of this research and the impact this research may have on inclusion and inclusive education in senior-secondary schools.

1.10 Significance of the study

Senior-secondary curriculum frameworks across Australia—each of which has different assessment and reporting requirements—intersect with the Australian Curriculum, Assessment and Reporting Authority (ACARA) (Australian Curriculum Assessment and Reporting Authority, 2022a) which dictates that "state and territory curriculum, assessment and certification authorities are responsible for determining how the [senior-secondary] Australian Curriculum content and achievement standards are to be integrated into their courses" (Australian Curriculum Assessment and Reporting Authority, 2018, para.3).

DI is considered a framework and pedagogical model that can attend to student diversity in the classroom by allowing teachers to adjust instruction according to the variability in their classrooms (Gheyssens et al., 2020b) based on data-driven teaching for all content and grade levels (Dack & Triplett, 2020). DI research is particularly widespread in contemporary literature and is largely regarded as a successful framework for responding to learner diversity in a holistic manner (Sun & Xiao, 2021).

Accordingly, many schools worldwide use DI to create an inclusive environment in classrooms (Gheyssens et al., 2020b; Jarvis et al., 2017; Sharp et al., 2018). A review of the relevant research literature, however, has uncovered only a limited number of studies on inclusive teaching practices within a senior-secondary education context (Smale-Jacobse et al., 2019), particularly regarding accommodating learner diversity (Whittle et al., 2019) and how the use of frameworks such as DI can support students' academic achievements.

In their analysis of how teachers create barriers to participation in secondary schools, Graham et al. (2018) stated that students with additional needs are at a disadvantage when mainstream schools do not provide the necessary adjustments or proactively cater to learner diversity, which is a key premise of DI. For students who are not given an equitable and inclusive learning experience, the feeling of not being able to achieve academically can result in lower self-esteem and low motivation to attend school (Yngve et al., 2019). This low attendance further compromises students' academic achievement and can result in students leaving school to attend vocational education programmes. Research by Dulfer (2019) and Whittle et al. (2019) found that students with high academic achievements have increased opportunities across a range of tertiary education options and employment prospects

(Dulfer, 2019; Whittle et al., 2019). Therefore, understanding how to improve student achievement among students with diverse learning needs is important.

Investigation of how teachers create inclusion within the constraints of their senior-secondary framework and variability in senior-secondary curriculum frameworks may allow for greater inclusion to occur. Similarly, knowing how senior-secondary teachers understand and implement DI and their perception of the barriers to doing so is equally important as this will enable more targeted PD related to the senior schooling context. Highlighting the promoters and challenges of DI can contribute to reducing the paucity of research in this area and lead to greater inclusion which has significant benefits for students, such as greater outcomes in literacy and numeracy for students with learning difficulties.

Furthermore, considering the roles that teacher attitudes and self-efficacy have in the implementation of DI, understanding the factors that shape teacher attitudes and self-efficacy could improve the ways teachers implement DI. Overall, the intended outcomes of this research may allow for greater inclusion in senior-secondary schools, resulting in lower educational dropout rates (Radzevičienė et al., 2019) and greater success among students with learning difficulties. The following section provides an overview of how this thesis is structured, with a brief overview of what each chapter details in.

1.11 Thesis outline

Chapter 2 reviews relevant literature concerning DI, teacher attitudes, teacher beliefs, student outcomes for those with learning difficulties and the literature tied to the themes that emerged as part of the conceptual framework. The themes within the

conceptual framework included: 1) differentiated instruction policies and legislation; 2) professional learning; 3) curriculum and pedagogical choices; 4) self-efficacy.

This study is informed by a social constructionist paradigm and utilised a qualitative approach, as explained in Chapter 3. The case study methodology, which employed semi-structured interviews and personal artefacts, is examined in relation to the research questions. Chapter 4 reports the results of this study using a reflexive thematic analysis (RTA) approach based on the criteria set out by Braun and Clarke (2021). Each theme and sub-theme is discussed using a series of transcript excerpts from teacher participants. The discussion is presented in Chapter 5 based on the results and emergent themes. The results are linked to the research questions, and factors are identified that may influence teacher attitudes and self-efficacy towards DI implementation in senior-secondary schooling. Additionally, how these factors influence the provision of DI is also discussed. Chapter 6 addresses the strengths and limitations of this study along with the implications for policy and practice. Finally, recommendations for future research are explored. The subsequent section provides a summary of the key points from this chapter.

1.12 Summary

This research investigated teacher attitudes and self-efficacy towards DI in senior-secondary schools across two Australian states. Each state is responsible for their own unique senior-secondary certificate of education. Senior-secondary schooling is multifaceted and differs from primary, middle, and general secondary schooling. The researcher positioned themselves within the research and discussed the reasons why they felt a connection to investigating DI in the senior school context. The aims and significance of the study were outlined.

This research was guided by a case study methodology, with the use of semi-structured interviews and personal artefacts as data collection methods. The collective case study methodology allowed for a deeper understanding of why teachers do and do not implement DI in their classrooms. This study is pertinent as the findings will contribute to addressing the gap in research in this area and aid in improving the ways in which students with learning difficulties can be supported in their senior-secondary schooling journey.

This chapter has summarised the key issues related to DI over the past two decades, which guided the construction of the aims of this research study. Furthermore, this chapter outlined what learning difficulties are and why they are the focus of this research, while defining how inclusion can be achieved for students with learning difficulties or additional needs.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The previous chapter defined inclusion and inclusive education, attitudes, and beliefs, and outlined what learning difficulties are. As the researcher reviewed the literature on differentiated instruction and teacher attitudes, key themes emerged from the literature. These themes have been identified in previous research as possible impacts on teacher attitudes towards DI: 1) differentiated instruction; policies and legislation; 2) professional learning; 3) curriculum and pedagogical choices; 4) self-efficacy. The themes discussed in the latter part of this chapter form the basis of the conceptual framework with which this research used to construct the case study design and methodology.

2.2 Critique of differentiated instruction

Differentiated instruction has been established as a framework that has the potential to create inclusive education for students. Furthermore, the research presented in Chapter 1 defined the use of both Tomlinson’s (2014) and Smit and Humpert’s (2012) DI frameworks, as well as outlining the various ways teachers can differentiate through content, process, product and/or learning environment. While it has been noted that DI can address the individual needs of each learner in a classroom, a review of the literature has highlighted that there are many criticisms behind the actioning and implementation of DI. These criticisms are discussed in this section.

DI has been a hot topic in education for the past two decades (Sun & Xiao, 2021), and only recently has research investigated the outcomes when multiple elements of the model are utilised (Sun & Xiao, 2021; Tomlinson, 2013). With that,

DI has attracted a degree of criticism throughout the last 20 years. Gheyssens et al. (2020b) argued that teachers experience a great deal of pressure to create inclusive classrooms and may not feel sufficiently prepared to do so, particularly if they have a perception of a deficit in necessary time to implement inclusive practices properly (Yngve et al., 2019). Effective inclusive practices ensure that all students are able to participate in the teaching and learning environment. Therefore, the concept of DI, as an inclusive practice, may alarm teachers in the first instance, especially given the complexities of each element within the DI framework.

Similarly, if teachers adapt or differentiate the curriculum based on biased expectations, this could lead to a greater sense of segregation rather than inclusion (Roose et al., 2019)—the opposite of what DI stands for. For example, if teachers group students in the same way each time without recognising student growth, this could lead teachers to lower their expectations of their students. This, in turn, could result in lower academic achievement, particularly as previous research shows that when schoolwide DI is implemented, positive achievement occurs across subject areas (Tomlinson, 2013).

Similarly, research by Rubie-Davies (2007) found that when teachers hold high expectations for their students they regularly evaluate student learning needs. Roose et al. (2019) similarly found that high expectations led teachers to use instructional practices that benefited all students, in contrast to teachers with low-expectations. One of the general principles which DI is founded upon is the need for quality curriculum to be upheld (Tomlinson, 2014). Previous research supports the notion that teachers maintain continuously high expectations of their students to avoid confining students into various areas, leading to segregated practices (Roose et al., 2019; Rubie-Davies, 2007).

Within the reviewed literature, DI has been stated as simply "good teaching". Many educators criticise the framework, however, seeing DI as too ambitious (Tomlinson, 2013). Furthermore, educators see the framework as too complex to implement, particularly when addressing all students' needs (Yngve et al., 2019). This complexity requires teachers to think about the impact their learning techniques have on children and to adapt them accordingly (Sogo & Jeremiah, 2018). If teachers do not reflect—whether purposefully or instinctively—about their practice of the DI concept they are employing, then negativity towards DI may arise and teachers may become less willing to differentiate.

In contrast, Smets and Struyven (2020) propose that the complexities in implementing the DI framework lie in three key areas. Teachers need knowledge about instructional strategies, the skills to assess and respond to learner diversity, and the beliefs to engage in it, which involves more than a series of teaching strategies—DI is a philosophical approach to teaching and learning. This point highlights the idea that while DI is a framework, there is a level of teacher knowledge and ability required for DI to be actioned in an effective manner. In contrast, Goddard et al. (2019) argued that while DI is complex, efficacious teachers are more likely to be persistent and resilient in the face of such complexity, leading to an increase in desired outcomes. Therefore, research has demonstrated that while DI faces much criticism for its complex framework, that does not mean that its implementation is completely out of reach for all teachers.

While not directly criticising the DI framework, Tomlinson (2001) acknowledged that obstacles such as limited time, large class sizes, busy teacher schedules, and limited training in differentiation can impede those teachers who are willing to try and improve their practice. This view was substantiated by research

from Melesse (2016), who similarly found that shortage of materials, shortage of time, and reduced administrative support were factors that hampered teachers' abilities to implement the DI framework. The study by Melesse (2016), however, was completed within a primary school setting, and may not reflect the attitudes and context of senior-secondary teachers. These drawbacks of the DI framework are explored in more depth within the case studies, further surveying the views of teachers, that underpin this research.

As this research focused on the impact of differentiated instruction implementation for students with learning difficulties, the subsequent section highlights the literature pertaining to the outcomes of students with learning difficulties. It is pertinent to note, however, that the researcher recognises that DI is for all students, not just those with learning difficulties.

2.3 Outcomes of students with learning difficulties

The research presented in Chapter 1 drew attention to the point that students with learning difficulties may be struggling with their academic achievement in schools. Low academic achievement has always been a predictor of educational withdrawal from formal learning environments (Harðardóttir et al., 2015; Korhonen et al., 2014; Radzevičienė et al., 2019), which may have permanent consequences on an individual's quality of life (Harðardóttir et al., 2015). Students with learning difficulties often experience low academic achievement, thus, according to Gubbels et al. (2019) are at an increased risk of withdrawing formally from school. Research by White (2020), who completed a study in Australia, confirmed that students with learning difficulties enter secondary schooling with deficits in areas such as literacy, numeracy, writing, reading and comprehension, thus, placing them behind their

peers. Hence, withdrawal from formal schooling may be more common for students with learning difficulties, than those without, due to the difficulties they face in their learning.

Not only does having a learning difficulty place students behind their peers, a Finnish cross-sectional study completed by Taanila et al. (2011) found that students with mathematical learning difficulties were associated with increased behavioural and emotional problems. More specifically, girls were more likely to have increased emotional problems, whilst behaviour of boys was of concern. This study, however, was completed with eight-year-old students, who are considered to be in primary school, thus, this does not reflect a secondary context in Australia. Yet, when students move from primary to secondary, they often bring with them their experiences and challenges (White, 2020), reflecting that students with learning difficulties may experience these same concerns around behavioural and emotional issues in senior-secondary schools.

Similarly, Chitsabesan and Hughes (2016) acknowledged that there are few studies that explore the prevalence of young offenders with learning difficulties, yet they recognise that students with learning difficulties appear more likely to offend. While the statistics are not current, a study completed by Kenny et al. (2006) that looked a young people in the state of New South Wales, Australia, who were serving community orders as offenders, found that 21% of young people had reading difficulties. Furthermore, 64% had significant arithmetic problems (Kenny et al., 2006) outlining the potential risks a learning difficulty may pose to the future of students, particularly if the difficulty is not overcome or addressed at school. Therefore, finding ways to overcome students' learning difficulties may allow for

better post-school outcomes (Bowler et al., 2018; Korhonen et al., 2014; Watson & Boman, 2005).

Borschmann et al. (2020), who conducted a global systematic review regarding adolescents within the criminal justice system and how they were affected by complex health problems, found that "reported rates of learning difficulties among detained adolescents ranged from 10% to 13% … [and that] these rates are considerably higher than those reported in general population studies" (p. 118). These findings were mirrored by Macdonald (2012), however, they investigated the barriers to employment for those with a specific learning difficulty within the UK. They found that 75% of offenders with a learning difficulty were unemployed, compared to 22% who were considered employed. Thus, further reflecting that learning difficulties which are not remediated in the classroom, can lead to poorer post-secondary outcomes, such as that of unemployment and incarceration.

The reviewed research has highlighted that attending to learning difficulties at school is important to support student learning and the sooner the difficulties are identified and addressed, the better for the student. Some students, however, may require support throughout their schooling to provide them with the best opportunities to develop independence post school. This is crucial, given that students with learning difficulties often leave formal schooling early, are overrepresented as juvenile delinquents, and experience long term unemployment as a result of their difficulties (Bowler et al., 2018; Korhonen et al., 2014; Watson & Boman, 2005). As this research explored the impact of teacher attitudes towards the provision of DI for students with learning difficulties, the following section reviews the literature on teacher attitudes towards inclusive education.

2.4 Review of literature on teacher attitudes

Chapter 1 sought to define what attitudes are, using the ABC model by Eagly and Chaiken (1998) and examining the TPB by Ajzen (1985). This section reviews literature pertaining to teacher attitudes, namely towards inclusive education and differentiated instruction.

MacFarlane and Woolfson (2013) used the TPB in their research to examine the relationship between teacher attitudes and behaviour towards inclusive education. Through their study of primary school teachers, they discovered that teachers who had greater experience with students with additional needs held fewer positive feelings and were less willing to work with those students. The authors noted that the teachers' negative attitudes could be attributed to the nature of their experience rather than their feelings towards the group. This would suggest that future research cannot look solely at teacher attitudes, but also the factors, such as teacher experiences, that govern these attitudes.

Equally, Yan and Sin (2014), who analysed the link between intention and behaviour regarding inclusive education, found through their survey that teacher attitudes, confidence, and PD were significant predictors of their intention to implement inclusive education. This view was further mirrored by Hellmich et al. (2019), who acknowledged that their empirical findings were similar to those of Yan and Sin (2014), and highlighted the importance of attitudes towards inclusion and self-efficacy beliefs.

In contrast, Knauder and Koschmieder (2019) were able to delve deeper into self-efficacy beliefs, confirming that teachers who held a stronger belief in their own ability were more likely to implement measures related to inclusive education, such as individualised support, and that the links between self-efficacy and attitudes

towards individualised support were noteworthy. Not only did teachers with a stronger belief in their own ability show more positive attitudes towards providing individualised support, but these attitudes then, in turn, positively affected teachers' self-efficacy. In other words, teacher attitudes and self-efficacy have a bi-directional relationship, mutually reinforcing relationship.

There were limitations, however, to the studies by Hellmich et al. (2019), Knauder and Koschmieder (2019), and Yan and Sin (2014). These studies used a self-report scale as the only measurement tool and they did not take into account direct observations or collection of artefacts, which may have increased the credibility and trustworthiness of their results. Hellmich et al. (2019) and Knauder and Koschmieder (2019) stated that in neither study was their self-report questionnaire empirically tested, casting some doubt on the validity of their results and begging the question as to whether use of other methods would have supplemented their self-report approach and increased validity and credibility.

Use of other methods is particularly important as Hellmich et al. (2019) and Yan and Sin (2014) noted that the measurement of intention can prove challenging unless measuring intention is taken directly before the behaviour is exhibited, thus, due to COVID19 challenges—namely restrictions on outside people attending school sites—it was decided that measuring intention would not be the focus of this study. This research, instead, utilised semi-structured interviews, along with the exploration of planning documents that highlight differentiated instruction. This method reduced any potential bias that might have occurred through teachers self-reporting.

It is crucial to note that all three of the aforementioned studies were completed outside Australia and in a primary school context and therefore may not reflect the senior-secondary schooling context—providing a gap in the research to be explored.

The TPB (Ajzen, 1985) states that attitude towards behaviour describes the extent to which a person values a specific behaviour and whether that behaviour will lead to a valuable experience or associated consequences. Teachers within a senior-secondary context may value DI differently compared to their primary counterparts or may differ in the level of consequences they feel are attached to differentiated instruction (e.g., the lack of time, resources, or support needed to execute differentiation effectively). The exploration of elements from the conceptual framework—discussed later in this chapter—and other identified factors from the literature allowed for deeper knowledge to be gained about what drives attitudes to consider behaviour—such as engaging with differentiated instruction—to be a valuable experience or not. This research allowed for greater exploration into the TPB model with specific reference to senior-secondary teachers, as opposed to its application in primary settings.

As discussed in Chapter 1, this research included definition of beliefs, as to not run the risk of excluding factors that may influence the provision of DI in senior-secondary schooling. Thus, along with the definition of beliefs presented in Chapter 1, a review of the relevant research on teacher beliefs towards DI and student diversity, are discussed below.

2.5 Review of literature on teacher beliefs

Currently there is a paucity of research in the area of teacher beliefs and their practice with DI (Whitley et al., 2019), which is concerning, given that teachers' belief systems—much like teachers' attitudes—inform their thinking and decision making (Polat et al., 2019). In other words, the "how, why and what a teacher teaches" (Devine et al., 2013, p. 84). While attitudes towards DI have been explored

in great detail between 2015 and 2020 (Sun & Xiao, 2021), research on teachers' beliefs has seldom followed this trend, leaving contradicting findings between beliefs and varied conceptual and theoretical frameworks (Whitley et al., 2019).

While this research does not directly investigate teacher beliefs, the research investigated the factors that influence teacher attitudes, which may include teacher beliefs, given they play an important role in the philosophy of the DI framework. For example, Tomlinson (2000) outlined seven key beliefs teachers must uphold when thinking about differentiating their teaching and learning experiences: (a) recognising that students who are the same age can differ in their interests, learning styles, life circumstances and their readiness to learn; (b) understanding that the differences in students are significant enough to make an impact on what students need to understand and learn, the pace at which they can learn it, and the support they require from others; (c) understanding that students learn best when they are pushed slightly beyond where they can work without assistance from adults; (d) knowing that students will learn best when they can connect what they are learning in the classroom, with real life experiences; (e) understanding that students learn best when learning experiences are natural; (f) recognising that students are more effective learners when they feel respected; (g) play a role in the school for maximising the capacity for each student.

Börnert-Ringleb et al. (2020), who investigated the relationship between attitudes towards inclusion and beliefs about teaching and learning argued that it is such beliefs, like those of Tomlinson (2000), that represent teachers' perspectives on how students should be taught. Sheehy et al. (2019) shared a similar view to Börnert-Ringleb et al. (2020), who stated that teachers' epistemological beliefs direct and reflect their classroom practice but their study went further in investigating teacher

beliefs towards inclusive education. Their study argued that teachers' epistemological beliefs are highly influential during complex situations, and that individuals will reach different decisions and do different things, when there is more than one response or solution. This point highlights the importance of reviewing teacher beliefs towards DI, as the DI framework is complex (Yngve et al., 2019) and offers teachers many ways in which they can respond to learner diversity. Thus, the variety in the DI framework may see teachers' beliefs influence decision-making processes, further shaping teacher attitudes.

Furthermore, Whitley et al. (2019) stated that when teachers see a significant impact on their students when using a certain pedagogical approach, there is a considerable change in their beliefs and attitudes after seeing the evidence of improvement and student success. It can be concluded then, that if teachers utilise the DI framework through its variety of options to differentiate, and see success using DI options, that their belief systems not widen further, but positively impact upon their attitudes towards the framework itself.

It is likely that throughout this research, that while beliefs are not directly being measured, they may form one of the factors that impact upon senior-secondary teachers' attitudes towards DI. Attitudes are likely to be based on beliefs, but this is an exploration of attitudes and by introducing this parameter, allowed the researcher to uphold the principles of a case study, as a unit with boundaries (Merriam, 1998). Self-efficacy beliefs related to DI are further reviewed in the latter part of this chapter, when reviewing literature pertaining to the themes that form part of the conceptual framework.

2.6 Themes pertaining to the conceptual framework

Up until this point, the reviewed literature has focused on DI, learning difficulties, attitudes, and beliefs. From this point forward in this chapter, the reviewed literature focuses on the four themes that formed part of the conceptual framework. These themes included: 1) differentiated instruction policies and legislation; 2) professional learning; 3) curriculum and pedagogical choices; and 4) self-efficacy. The first theme reviewed included literature pertaining to differentiated instruction policies and legislation—outlining the relevant policies and legislation in Australia that have connection to DI. Policies appeared to impact upon teacher attitudes towards DI, as well as the professional learning (or professional development) in DI, teachers participated in. Professional learning in secondary schooling was impactful on teacher attitudes towards DI, but also, the pedagogical strategies teachers used to differentiate for one's students. In contrast, the reviewed literature highlighted that pedagogical choices too, may impact upon how efficacious one is, towards implementing DI in one's classroom. Last, the literature highlighted the importance having a positive self-efficacy is, in enacting DI, however, the link between self-efficacy and teacher attitudes was unclear. The themes of the conceptual framework are presented in order of how they may be impacting upon one another. For example, DI policies and legislation are presented first, as they may be impactful upon professional learning, discussed in the subsequent section.

2.7 Policies, legislation and documents relevant to differentiated instruction

In contemporary education, DI is represented in documents such as the AC (Australian Curriculum Assessment and Reporting Authority, 2022a) and Australian Professional Standards for Teachers (Australian Institute for Teaching and School

Leadership [AITSL], 2017), which is a public statement, as a response to the diversity that exists in all classrooms (Frankling et al., 2017; Schipper et al., 2020; Sharp et al., 2018). DI, however, does not exist in any formally endorsed legislation in Australia (Gibbs & McKay, 2021). While policies do exist, Roose et al. (2019) discovered that much of the variance in teachers' beliefs towards utilising and implementing DI techniques could be attributed to a lack of general policy and, hence a reduced shared vision regarding DI. This point suggests that either schools are not utilising policy documents regarding DI from curriculum frameworks, or that other policy documents do not exist in DI. Roose et al's (2019) study was delimited to secondary schools in Belgium, which follows a different curriculum to Australian states and territories. Hence, may not reflect the Australian context.

Conversely, Bhattacharya (2017) argued that education itself has become fraught with policy, that teachers were being asked to do more with less time, and that policy changes were not a priority. This shortage of priority could be attributed to the fact that, unlike in the US, DI is not formally endorsed within Australian legislation and that much of the information about DI is embedded within curriculum documents and the Australian Professional Standards for Teachers (AITSL, 2017; Gibbs & Beamish, 2020). For example, standard 1.5 of the Australian Professional Standards for Teachers outlines that teachers need to "differentiate teaching to meet the specific learning needs of students across the full range of abilities" (AITSL, 2017, para.5). Within these standards, teachers may be developing their proficiency in differentiation, or leading others to differentiate, depending on what stage of the standards they are at. The AC focuses on the Foundation Year to Year 10, while each state has a different framework and educational body for senior-secondary years and may therefore differ in their approach to DI for that age group.

Furthermore, although there are many studies on DI, there is limited research on DI and curriculum policies (Eikeland & Ohna, 2022), particularly in Australia (Frankling et al., 2017). When policies do exist, there is an increased awareness of DI and a change in teachers' understandings and expectations (Sharp et al., 2018), highlighting a substantial need to investigate policy documents in senior-secondary curriculum frameworks. There is a significant amount of literature on the benefit of DI for diverse students (Bhattacharya, 2017), but little of the literature focuses on senior-secondary education.

Furthermore, Monteiro et al. (2019), investigated teacher self-efficacy, and pointed out that knowledge of policy about inclusive education led to greater self-efficacy in including students with additional needs. Bondie et al. (2019) attributed this knowledge to the fact that when DI definitions and policies align with teachers' own beliefs, they feel more confident in their use and implementation. Therefore, inclusive education policies and documentation must firstly exist in senior-secondary frameworks and be tangible for teachers in senior-secondary education for teachers to feel confident in using DI.

Sun and Xiao (2021), in their bibliometric analysis of two decades (2000—2020) worth of research regarding DI, found that much of the current research on DI focuses on the study of teachers and students but that investigation of policy could be strengthened. This research aimed to contribute towards filling this paucity, further developing an understanding of factors that influence DI implementation.

Worldwide educational policies are being created with the aim of increasing inclusive education practices to address additional needs (Gheyssens et al., 2020b). which in theory shows a step forward in inclusion. Researchers must first, however, investigate whether teachers are using these policies to guide their practice and use

of DI, and how these policies shape their attitudes and dispositions. Given that this study focuses on the Australian context, the relevant Australian legislation and policies have been reviewed below in the next sub-section.

2.7.1 Australian policies, legislation and relevant documents

Within Australia, national legislation support inclusive education and the teaching of students with diverse learning needs, in both the Disability Discrimination Act (Commonwealth Government, 1992) and the Disability Standards for Education (Commonwealth Government, 2005). These policies have a focus on ensuring that individuals with a disability are free from discrimination and guarantee that schools are accountable for students with disabilities and are actively providing them with an inclusive learning environment and equitable experience.

The Disability Discrimination Act (DDA) (Commonwealth Government, 1992) is a legislative recognition that outlines that it is not sufficient to treat a person with a disability in the same way as person without a disability. Furthermore, the DDA states that for the person with a disability to be accommodated for, they may require reasonable adjustments (Hodgson, 2012). Section 22 of the DDA outlines the role of the Act in education settings, stating that “it is unlawful for an educational authority to discriminate against a student on the ground of the student’s disability” (Commonwealth Government, 1992, p. 25), which is where reasonable adjustments are implemented, to reduce and avoid this discrimination. Cumming and Dickson (2013), who discussed the process of inclusion and equity for students with disability in Australia believe that the broad definition of what constitutes a disability, embraces those with learning difficulties, including “disorders affecting the way a

person learns" (p. 224) as well as "a disorder or malfunction that results in the person learning differently" (Commonwealth Government, 1992, p. 5).

Similarly, van Kraayenoord and Chapman (2016) mirrored this view, stating that while learning difficulties are not recognised within the DDA, learning disabilities are recognised. This reduced recognition is challenging considering that school education systems most frequently use the term learning difficulties (Todd et al., 2022), causing schools and education systems to use the term learning disabilities (van Kraayenoord & Chapman, 2016).

Likewise, the Australian Disability Standards for Education (DSE) (Commonwealth Government, 2005) were developed from the DDA (Commonwealth Government, 1992) with the objectives to (a) "eliminate, as far as possible, discrimination of disability in the area of education and training" (Commonwealth Government, 2005, p. 6) (b) "ensure, as far as practicable, that persons with disabilities have the same rights to equality before the law in the area of education" (Commonwealth Government, 2005, p. 6) and (c) to "promote recognition and acceptance within the community of the principle that persons with disabilities have the same fundamental rights as the rest of the community" (Commonwealth Government, 2005, p. 6). These objectives were developed to bring clarity and specificity in education, allowing teachers and educators to better understand the DDA (Cumming & Dickson, 2013). According to Cumming and Dickson (2013), the standards mean that educational institutions must be proactive to eliminating discrimination and are a benchmark for compliance against the DDA. This means that teachers and educators must be proactive in addressing the needs of students with learning difficulties (and disabilities) to limit discrimination. This is achieved with reasonable adjustments.

The DSE describes adjustments as “a measure or action (or group of measures or actions) taken by an education provider that has the effect of assisting a student with a disability…on the same basis as a student without a disability” (Commonwealth Government, 2005, p. 10). “An adjustment is reasonable in relation to a student with a disability if it balances the interests of all parties affected” (p. 10), however, meaning that the adjustment cannot just be for the betterment of the student alone, but that the reasonable adjustment cannot have a negative effect for/on the education provider too. The DSE indicates that students in need of the reasonable adjustment must be consulted before the adjustment can be implemented.

Interestingly, Gillies (2013) argued that how this consultation should occur, with reference to the DSE, is very vague and that for appropriate and effective reasonable adjustment to be put into place, three principles need to be put into practice.

Firstly, there is a need for an equitable approach to assessments and adjustments, and secondly, adjustments must maximise opportunities for students with disabilities. Finally, students in need of adjustments need to be informed about appropriate assessment adjustments. The DDA and DSE guide schools and teachers to understand their responsibilities in catering to the needs of students with disability and/or learning difficulties, to ensure full participation and elimination of victimisation and harassment in the educational setting. There are limitations, however, given the lack of consistency with terminology, as discussed earlier in this chapter. In a report completed by the Australian Capital Territory’s Department of Education and Training Taskforce on students with Learning Difficulties (Australian Capital Territory: Education and Training, 2013) the biggest concern that arose was that:

> the use of inconsistent terminology added to the complexity of the work of the Taskforce. Nationally and internationally, learning disability, specific learning disability, learning difficulty and to a lesser extent learning disorder and learning difference are used to describe the same things and also different things. Prevalence rates therefore vary due to differing definitions. There has been little debate around the definition in Australia and the inconsistent use of the terms learning disabilities and learning difficulties is a significant issue for educators and families. Until the issue of terminology is resolved, ambiguity and resultant implications for support remain, as does clarity concerning the definition in respect to the Disability Discrimination Act 1992 (DDA) and the Disability Standards for Education 2005. (Australian Capital Territory: Education and Training, 2013, p. 1)

This statement highlights the point that while the DDA and DSE specifically discuss disabilities and how educators and teachers are expected to cater to the needs of these students, that interpretation of what constitutes a disability and learning difficulty is ambiguous and broad, leading readers of these documents to include learning difficulties within these documents.

More recently, the Alice Springs (Mparntwe) Education Declaration (Australian Government, 2019) was created with the goals of creating an education system that promotes equity and excellence, with a focus on ensuring young Australians feel confident and become successful lifelong learners. This declaration aims to support all young Australians at risk of educational disadvantage, including students with a disability and learning difficulties. For example, as part of goal 1 of the declaration, which states that "the Australian education system promotes excellence and equity" (Australian Government, 2019, p. 5) the government is

committed to work with the education community to "promote personalised learning and provide support that aims to fulfil the individual capabilities and needs of learners" (Australian Government, 2019, p. 5). Furthermore, the declaration aims to support all young Australians at risk of educational disadvantage by providing "targeted support [that] can help learners such as…children with disability to reach their potential…[by] tailoring to the needs of individuals across a system that prioritises equity of opportunity and that support achievement" (Australian Government, 2019, p. 17).

The declaration is important to this research, as the South Australian and Queensland Education Ministers signed this declaration and the case studies within this research are conducted in these respective states. The declaration reflects a "commitment to improving educational outcomes for young Australians" (Australian Government, 2019, p. 2) and teachers are the ones which ultimately enact this in their classrooms.

Another document that guides teacher practice is the Australian Professional Standards for Teachers (APST) created by the Australian Institute for Teaching and School Leadership (AITSL, 2017). These are a set of standards used to support "teachers to reflect on their practice and develop and grow their expertise" (para. 1). Within their written guide of the standards, AITSL (2011) describe their standards as "a public statement of what constitutes teacher quality. They define the work of teachers and make explicit the elements of high-quality, effective teaching in 21st century schools that will improve educational outcomes for students" (p. 3). These standards are important for this study, as they explain that teachers should be catering to the needs of their students with learning difficulties and/or learning disability.

For example, within the domain of professional knowledge and standard 1, "know students and how they learn" – teachers must (at a graduate level) "demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities" (AITSL, 2011, p. 11). This standard reflects the importance of teachers having a deep understanding of frameworks that promote DI, such as that of Tomlinson (2014) and Smit and Humpert (2012).

Furthermore, descriptor 1.6 within the standards outlines that teachers' need to support students with disability, allowing them full participation. At a graduate level teachers meet this descriptor by "demonstrat[ing] broad knowledge and understanding of legislative requirements and teaching strategies that support participation and learning of students with disability" (AITSL, 2011, p. 11). Similarly, within standard 4 of "create and maintain supporting and safe learning environments", teachers need to be able to "identify strategies to support inclusive student participation and engagement in classroom activities" (AITSL, 2011, p. 11). Therefore, creating and maintaining a supportive learning environment is a teacher's responsibility within Australia to understand and apply inclusive practices to support all students, not just those with learning difficulties.

While the graduate level has been presented here, "the standards are organised into four career stages and guide the preparation, support and development of teachers" (AITSL, 2011, p. 3) to allow teachers to better their teaching practice in relation to each of the standards. Thus, it is recognised that while the standards reflect a common ground for what teachers need to be doing in their classrooms, AITSL recognise that there are varying degrees of competency when meeting these standards.

More recently, the Australian Government and Education Services Australia have introduced the Nationally Consistent Collection of Data for School Students with Disability [NCCD] (2020c). "The NCCD is an annual collection of information about Australian school students with disability. The NCCD enables schools, education authorities and governments to better understand the needs of students with disability and how they can be best supported at a school level." (NCCD, 2020c, para. 1). The NCCD is underpinned by the DDA and the DSE, with students being included in the census, when they meet the broad definition of disability in the DDA, and schools have documented evidence of at least 10 weeks of adjustments to their learning.

While the term disability has been used in describing students that are eligible to be included in the NCCD, the NCCD states that students can be included when they have "a disorder or malfunction that results in the person learning differently from a person without the disorder or malfunction" (NCCD, 2020a, para. 5). Given that the earlier definition of learning difficulties encompassed a range of factors that constitute what a learning difficulty is, students who have learning difficulties may be included in the NCCD if they meet the broad criteria of the DDA. It can be quite confusing as to whether a student can be included in the NCCD if they have a learning difficulty as the NCCD recognise that "the terms learning differences, learning difficulties and learning disabilities are often used interchangeably, and definitions of these terms can vary between institutions and agencies, nationally and internationally" (NCCD, 2020b, para. 1).

Furthermore, the NCCD asserts that students with learning difficulties may be attributed to factors such as "absenteeism, ineffective instruction, inadequate exposure to necessary curricula, English as an additional language, socio-economic

status and personal or family trauma…may lead to difficulties for the student in meeting the expected learning targets for their age and/or years of schooling" (NCCD, 2020b, para. 4), yet "students with…learning difficulties, when attributed to the above, are not included in the NCCD" (NCCD, 2020b, para. 9). Therefore, given the DDA and the various definitions of what constitutes a learning difficulty, both as discussed earlier and by the NCCD, it can be said that the NCCD plays an important role for students with learning difficulties, when their difficulties can fit within the broad definition of the DDA.

When students with learning difficulties do not fit the criteria within the DDA, the NCCD does not recognise these students, creating an inconsistent approach towards students with learning difficulties. Therefore, finding ways to support students with learning difficulties is pertinent if they are not supported in relevant policies or legislation. The subsequent section reviews literature pertaining to DI and professional learning. Professional learning in DI may allow teachers to upskill in DI and increase their capacity to implement such a framework in their classrooms, however, the reviewed literature in the following section draws attention to professional learning in DI, and for catering to student diversity.

2.8 Professional development

Teacher learning is connected to student learning (Frankling et al., 2017; Sharp et al., 2018) which, as Schipper et al. (2020) indicated, could be attributed to the fact that teacher attitudes are shaped from professional development. Schipper et al. (2020) also stated that greater awareness, and positive attitudes towards student diversity leads to addressing these needs in a positive way. This conclusion is mirrored by Brink and Bartz (2017), who found that through targeted professional

development (PD), teachers fully understood the needs for DI and inclusion methods and thus began to make better use of these methods. Kousa and Aksela (2019) went further, stating that authentic environments for teachers to professionally learn could increase their knowledge, skills, and confidence to teach diverse learners. Hence, PD has been seen as an effective method for educating teachers about DI, further influencing changes in their attitude to the framework and its use.

de Graaf et al. (2019), however, who implemented a small-scale professional development trajectory with a team of senior-secondary biology teachers, found that PD led to DI having a disappointing impact. Teachers commented on how students felt uncertain about lesson structure, and how the teachers themselves felt dissatisfied with their DI lessons, compared to non-differentiated lessons. This suggests that the various ways teachers are taught about DI and how to implement DI creates varying degrees of success in attitudinal change towards the framework and in students' perceived level of progress. This variation could be attributed to the trainer/facilitator who runs the PD focused on DI implementation and use, given that sometimes trainers themselves lack knowledge and skills in DI and are not effective role models (Pozas & Letzel, 2019).

There is a significant need for PD in DI for teachers, to enable them to better implement DI in their classes (Frankling et al., 2017; Leballo et al., 2021; Pablico, 2019). Sogo and Jeremiah (2018) found that one of the biggest reasons preventing teachers from implementing DI in their business studies classrooms, was a deficiency of knowledge of DI. Even though Kousa and Aksela (2019) found positive effects on DI implementation from PD compared with studies by de Graaf et al. (2019); Sogo and Jeremiah (2018)—who felt that PD on DI was not as beneficial as first thought—there were several limitations. Both studies focused on single

secondary subjects, such as business studies and biology, with Sogo and Jeremiah (2018) focusing on role plays and excursions as a way of differentiating—which is not a reflection of the depth and breadth of the DI framework. Similarly, de Graaf et al. (2019) only focused on a heuristic approach to differentiation with both studies (de Graaf et al., 2019; Sogo & Jeremiah, 2018) investigating single practices of differentiation. Most established DI frameworks tend to do this without providing an overview of the diverse strategies teachers can adopt within DI and by being too theoretical (Pozas & Letzel, 2019; Pozas & Schneider, 2019), highlighting the need for further research—not just into the multiple strategies DI offers for teachers, but how PD of these strategies, influences teachers across a range of senior-secondary subjects, not just single subjects.

Collectively, all three studies (de Graaf et al., 2019; Kousa & Aksela, 2019; Sogo & Jeremiah, 2018) looked at PD of DI for teachers in tackling student diversity and heterogeneity; however, they did not specifically look at the effect this has on students with learning difficulties. This is a limiting factor when investigating the effect of PD in shaping teacher attitudes towards the research questions and further research is required with a specific focus on diverse learning students in a range of senior-secondary subjects. According to Yngve et al. (2019), students with additional needs must be prioritised given their need to have for the highest level of support within the classroom environment. Given that special education teachers are better prepared for dealing with heterogeneity and diversity (Pozas & Letzel, 2019), the effects of PD run by special education teachers needs to be further investigated. The subsequent section reviews literature regarding curriculum and pedagogical choices concerning DI. DI is a framework that encapsulates many different teaching and pedagogical strategies, thus, reviewing literature on such strategies provides insight

into what strategies teachers may or may not be using to differentiate for their students.

2.9 Curriculum and pedagogical choices

Pedagogical choices in the DI framework is a common theme within the literature, in shaping positive or negative teacher attitudes towards DI. Studies by Johnston and Wildy (2018) and Maeng (2017) focused on one pedagogical and curriculum strategy related to DI, and both agreed that positive attitudes towards DI, within the secondary contexts of these studies, has the potential to increase student success.

Similarly, Sharma and Sokal (2016) and Dotzel et al. (2022) went further in their research and found that teachers who were highly inclusive in their classroom practices, tended to have more positive attitudes towards inclusion and less concerns and were able to keep complexity and variation in their teaching and learning environments when DI was applied. Thus, reflecting the importance of using inclusive frameworks, such as DI, in creating positive attitudes and increasing student success.

In contrast, Roose et al. (2019) reported that teachers with high classroom expectations displayed different instructional practices that benefited all students' achievements, especially when compared with low-expectation teachers. This study by Roose et al. (2019) looked more at teacher beliefs, and whether these beliefs directed teachers to be inclined to notice aspects related to DI, rather than examining the use of DI pedagogical choices.

Regardless of the methodologies used in these studies (Johnston & Wildy, 2018; Maeng, 2017; Roose et al., 2019), teachers who utilised various forms of DI strategies saw benefits, and teachers who purely observed classrooms did the same,

reflecting the fact that attitudes could have a greater impact on student success, regardless of whether attitudes were shaped by practical or theoretical knowledge of DI.

That being said, Schwab et al. (2019) indicated that there is a strong connection between positive attitudes and use of inclusive practices, further highlighting that attitudes and use of DI are twofold, and that they influence each other continuously. Similarly, Karst et al. (2022) found in their study, which focused on data-based DI through a reading strategy, that there was a significant gain in reading competence for all students in the intervention group compared to the control group. They further found that this success empowered teachers to cater to various needs of their learners. Thus, this indicates that teachers may need to see the success of their chosen DI strategy, to continue to use such DI strategies, and be motivated to engage in inclusive practice. This requires further investigation as teachers in the senior-secondary context may have different DI pedagogies and strategies compared to lower secondary schooling, where this study was conducted.

Attitudes shape the use of DI practices and pedagogical choices, while DI practices shape attitudes. Furthermore, research by Herbert et al. (2018) and Maeng (2017) and Shareefa (2021) agreed that pedagogical choices are not only shaped by teachers' attitudes, but by planning and preparation time. Even though Maeng (2017) found that DI benefitted student achievement, planning and preparation of DI techniques related to technology use took considerable time and effort. Time pressure, however, was not found in the study by Haelermans (2022) who found that teachers in their secondary school study in the Netherlands believed DI did not take more time than other instructional methods. This point highlights a disparity as to whether time is a factor in influencing DI use.

Furthermore, research conducted by Godor (2021) found that teachers' personal preferences for certain pedagogical practices, can dominate their teaching practice and thus, overshadow methodologies that can assist with meeting the needs of individual students, such as those associated with DI. Senior-secondary school teachers may be limited for time, which may reduce their ability to cater for diversity in their students (Yngve et al., 2019).

Interestingly, Pozas et al. (2021) who looked at student perceptions of DI, instead of teacher perspectives, found that students reported teachers often utilised strategies similar to mastery learning, rather than pedagogical choices related to DI. For example, tiered assessments were ranked as least frequent in the study by Pozas et al. (2021), and previous research has shown this to be one of the most applied DI methods (Pozas & Schneider, 2019). It could be argued, however, that students' perceptions of what constitutes a differentiated pedagogical choice, is different to that of their teacher, given this is an education specific pedagogical framework.

Building on tiered assessments as a DI approach, Magableh and Abdullah (2021) completed a study on fifty-four Year 10 English students from different schools, where one class was taught reading comprehension following DI strategies. These strategies included tiered assessments and instruction, while the other class used modified reading comprehension texts. Their results indicated a significant difference in reading comprehension between the two classes, with the differentiated class substantially improving the reading comprehension performance of the Year 10 students. Thus, highlighting the success of one DI strategy. In contrast, while not focused on senior-secondary, research from Tobin and McInnes (2008) found in Year two and three classes that scaffolding was a common DI practice for teaching struggling learners, particularly those with low literacy abilities. Hence, DI

strategies, and which strategies are most common, may be dependent on subjects and year levels. While the effectiveness of scaffolding is well documented (van de Pol et al., 2010), continual scaffolding may mean that students do not become independent learners and work within their ZPD (Pentimonti et al., 2017).

Like Yngve et al. (2019), teachers in the study by Magableh and Abdullah (2021) noted that reduced time was a significant disadvantage for implementing tiered assessments and instruction. Even with a perceived shortage of time, however, these teachers within the study by Magableh and Abdullah (2021) were able to create a differentiated environment that increased student performance. Therefore, decreased time may not affect teachers' abilities to cater for their students' needs, but instead generate negative feelings towards a perceived lack of time to differentiate learning.

Interestingly, while Pozas et al. (2021) found that differentiation of assessment, through tiered assessments was least common, Ismailos et al. (2022) reported that secondary teachers had a greater level of confidence in assessment differentiation and could provide challenge to their students. Therefore, it is unclear whether teachers across senior-secondary settings are confident in, and have good knowledge, of differentiation for assessment. Thus, this requires further investigation.

Given that use of inclusion and pedagogical practices shape teacher dispositions, senior-secondary teachers may have a negative attitude to reduced planning and preparation time, and subsequently, lack time to practically engage in DI practices. This negative attitude may compromise the academic achievement of secondary students. While Magableh and Abdullah (2021) noted that academic achievement increased, even with a perceived absence of time, their study did not

measure teacher attitudes directly. Furthermore, Damianidou and Phtiaka (2018) asserted that teachers' expectations are dependent on the type of need, and the fact that their attitudes are strongly influenced by the severity of a disability or learning difficulty, suggests that certain DI approaches could be employed for students with additional needs. This is further reflected by Stollman et al. (2021) who found that in teachers in secondary school tended to focus their pedagogical choices on the class as a whole, rather than the individual, which likely meant that not all of their students felt challenged to achieve their maximum learning potential. Consequently, further research is needed behind pedagogical choices teachers make, when presented with diverse learners in their classroom. Furthermore, if teachers indicate that the curriculum is inflexible, and does not allow them to differentiate accordingly, as found by Gibbs (2022) in her small-scale secondary study, then an investigation into what this means for students with learning difficulties and their achievement is required.

The next section reviews literature pertaining to self-efficacy and DI. There is an unclear link between teacher attitudes and self-efficacy, thus, reviewing literature pertaining to teacher self-efficacy beliefs in DI may provide further insight into the impacts of self-efficacy on the provision of DI.

2.10 Self-efficacy

Self-efficacy in teachers—not to be confused with teacher attitudes—is a teacher's belief in their ability to carry out effective teaching practices for diverse classrooms (Monteiro et al., 2019; San Martin et al., 2021), with attitudes considered a way of thinking or feeling. Bandura (1982) through his social cognitive theory, emphasised that self-efficacy is a person's belief in their capability to successfully

perform as task and that self-efficacy is one of the most powerful motivators of how well a person will perform at that task. Therefore, self-efficacy must be explored in connection with senior-secondary teachers and their use of DI, as their self-efficacy may be a predictor that influences their use of DI.

In the 1970s, Albert Bandura theorised that the beliefs people hold for themselves about their capabilities and the outcomes of their efforts, have a vast impact on the way in which they behave (Usher & Pajares, 2008). He termed these beliefs, self-efficacy beliefs. He determined that there were four sources of self-efficacy (Bandura, 1997), these being 1) mastery experiences; 2) vicarious experiences; 3) verbal and social persuasion; and 4) physiological and affective states. Bandura (1997) proposed that self-efficacy beliefs were malleable with research on teachers reflecting that self-efficacy beliefs can be changed early on in one's teaching career (Pfitzner-Eden, 2016). As this research focused on teacher self-efficacy beliefs in DI, the research by Pfitzner-Eden (2016) highlights the importance of investigating teacher belief, to determine ways in which self-efficacy can be shaped for greater DI implementation.

Bandura (1997) proposed that mastery experiences were the most powerful, stating that when one completes a task and they evaluate their efforts as having been successful, their self-efficacy increases. In the context of this research, mastery experiences links to the practical application of DI in the classroom. Similarly, vicarious experiences involves building self-efficacy through observing others. This tends to occur as a result of gauging one's capabilities from others. Vicarious experiences relates to this research through teachers observing other teachers engaging in DI implementation in their classrooms, and sharing of good practice with one another. Likewise, verbal and social persuasion is the third source of self-

efficacy, relating to when one receives encouragement and evaluative feedback from people such as peers and colleagues. In a teaching context, this may correspond to colleagues providing feedback to each other on the effectiveness of their DI implementation, as well as celebrating successes in DI. Last, self-efficacy beliefs can be influenced by one's affective (or psychological) state, linking to the impact of one's anxiety, mood, and stress. For example, anxiety towards DI implementation may be a potential barrier to one's self-efficacy beliefs.

The work by Bandura (1982) is still widely respected in the field of self-efficacy and has been used in studies related to inclusion. For example, Hernandez et al. (2016) cited the work of Bandura as their study focused on teacher attitudes towards inclusion, recognising that a teacher's self-efficacy belief ultimately affected their behaviour, and thus, performance outcomes. Furthermore Taylor and Ringlaben (2012) cited Bandura's social cognitive theory as being pivotal within their study on pre-service teachers' attitudes towards inclusion as they acknowledged that even though individuals might recognise they should be engaging in a certain behaviour, they are often unwilling to unless they know they can carry that behaviour out well. Their study stems well into this research, as it is recognised that teachers may want to engage in DI as an inclusive practice, but may not do so, as they feel they cannot execute DI well.

Furthermore, research suggests that positive attitudes alone are not sufficient for working effectively in an inclusive manner, but that positive self-efficacy leads to acceptance of students with additional needs in the classroom (Hauerwas & Mahon, 2018; Monteiro et al., 2019) and ownership in applying DI strategies (Dulfer, 2019). Thus, investigation of self-efficacy is crucial, as a higher sense of self-efficacy leads to more effective actions (Bandura, 1989; Malinen et al., 2013). This is a bi-

directional relationship as more effective actions, strengthens perceptions of efficacy (Bandura, 1989; Bandura & Adams, 1977) and more positive attitudes towards inclusion leads to higher self-efficacy (San Martin et al., 2021).

Conversely, Caldwell's (2012) study (as cited in Kamarulzaman et al., 2018) and research by Ninković et al. (2022) found that self-efficacy alone was enough to influence teachers' willingness to use DI practices. Regardless of their attitudes, teacher self-efficacy may be of greater importance in influencing the use of DI. Even more so, as secondary teachers' feel lower self-efficacy than their primary counterparts (Hauerwas & Mahon, 2018), reflecting that further investigation is needed into whether self-efficacy affects differentiation implementation in the senior-secondary context, or whether attitudinal factors play an intertwining role too.

Both the Hauerwas and Mahon (2018) and Monteiro et al. (2019) studies, however, were completed outside of Australia, and therefore may not reflect teacher attitudes and self-efficacy in this context, due to differences in policies, curriculum documentation and PD between different countries. Little is known about the self-efficacy of secondary teachers who teach additional needs students (Hauerwas & Mahon, 2018). This is further supported by research from Ninković et al. (2022) who found that teacher self-efficacy was positively related to the use of DI and that those with a higher sense of self-efficacy, differentiated their teaching more often compared to those with lower self-efficacy. This study, however, was completed in Serbia and only had a representation of 25.16 secondary teachers, therefore, may not fully reflect the self-efficacy of senior-secondary teachers in Australia.

Research by Bhattacharya (2017), Jarvis et al. (2017) and Pablico (2019) supports the use of professional development in enhancing self-efficacy, with increased PD leading to an increased sense of self-efficacy, which, when strong,

allows people to set higher goals and commit to them (Bandura, 1989). Professional development of teachers may, therefore, lead to a greater commitment of DI use in their classrooms. All three studies were conducted in a secondary setting, and thus provide evidence that learning about inclusive practices related to secondary school pedagogies, may create greater self-efficacy and a desire to implement DI in inclusive environments.

In contrast, research by Pozas et al. (2019), using a secondary school education setting, suggested that self-efficacy is dependent on each practice a teacher utilises, and that these practices always depend on learner contexts and their goals. This implies that teachers are selective as to the practices they choose based on the additional needs of the learners in their classroom, and that teachers have greater beliefs in their abilities depending on the practices they use. Moreover, students with additional needs are often on Individual Learning Plans (ILP's), which include individualised goals for the students that may further teachers' self-efficacy. Research, therefore, needs to be conducted into the reasons why teachers select certain DI strategies and feel more efficacious with them than with others, and what causes the teachers to select these practices when presented with learner diversity.

Contrary to the idea of self-efficacy and use of DI strategies, Frankling et al. (2017) argued that teachers' confidence is not due to their own sense of self-efficacy, but to their pre-existing beliefs about the capacity of young people. This suggests that teachers may be more confident to teach students and apply DI strategies if they feel that the students have the capacity to learn from that strategy, and that teachers may lack the self-efficacy to employ certain DI strategies if they perceive the student to be lacking in academic ability. The limitation here, however, is that this claim was not substantiated fully in Frankling et al. (2017) research, and came about as a result

of the fact that teachers in the study progressively developed a belief that all students could and would achieve success through academic growth (Frankling et al., 2017). That being said, the pre- and post- attitudinal tests were a strength in measuring change in teachers' self-efficacy beliefs.

Furthermore, a small scale study completed by Leballo et al. (2021) found that teachers' had a deep understanding of DI practices, but lacked confidence in their ability to implement it. This sentiment was further mirrored by Monk et al. (2013) who conducted a small-scale case study on DI based on the music curriculum of a secondary school. They found that with DI, teachers could identify student needs quite effectively, however, teachers felt the friction between what they know about DI, and what they are able to deliver practically. A shortfall of being able to differentiate practically was further supported by van Geel et al. (2022) in both primary and secondary settings across the Netherlands. Therefore, self-efficacy may or may not play a role in teachers' attitudes, and it appears that teacher self-efficacy may have a twofold effect on students' success. In contrast, research by Dixon et al. (2014) found that when teachers undertook more professional development in differentiated instruction, their self-efficacy beliefs were greater. Dixon et al. (2014) further highlighted that when teacher self-efficacy beliefs were higher, they were able to differentiate better for their learners. The research by Dixon et al. (2014), however, was conducted outside of Australia and with a relatively small sample size. Hence, further investigation into professional development for senior-secondary teachers is needed.

If students are perceived to be more academically capable, teachers may employ DI strategies confidently, increasing their self-efficacy and boosting student academic achievement further. Teachers' may even begin to notice DI practices

more. This point is supported by Keppens et al. (2021) who found that higher self-efficacy in student teachers' led them to notice classroom characteristics related to DI more, compared to those with lower self-efficacy.

Similarly, Gheyssens et al. (2020a), who led a study on teachers' noticing and reasoning towards inclusive practices, found that teachers who were more proficient at noticing inclusive practices were more effective at differentiated practices. Yet those who struggled to notice said practices, were less able to implement DI in their classrooms. The limitation to this, however, is that what strategies teachers' feel are just "good teaching", may actually be considered an inclusive practice, thus, teachers' perceptions of what constitutes an inclusive practice may be different to each other. While noticing inclusive practices may be a predictor of use of DI, student academic failure, or absence of capability, may lead to teachers having a lower sense of self-efficacy, making them less likely to use DI strategies, thereby not allowing the student to achieve academic success. This begs the question of how we can promote, enhance, and support teachers the self-efficacy to use DI strategies and to notice such strategies more, regardless of their perceptions of student capacity and learning goals.

Most notably regarding teacher self-efficacy and their practice of DI, Roose et al. (2022) confirmed in their study of 461 secondary teachers across 23 schools in Belgium that positive beliefs about DI are positively related to teachers' self-reported practice. This indicates that if one has a positive belief in DI, that they are more likely to differentiate for their learners. The limitation here, however, is that this study was completed in Belgium with secondary teachers and may not reflect the senior-secondary context in Australia.

In contrast, Woodcock et al. (2022) in their study with 41 primary teachers found that informing teachers about what inclusive education is, is not enough, and that more support is required in the actual application of inclusive education as a practice. This support is needed so that teachers can develop a greater sense of self-efficacy in their abilities to implement inclusive practices. This may hold true for DI, as DI is considered an inclusive practice. The next section outlines the conceptual framework that was constructed from the reviewed literature earlier in this chapter and guided the creation of the case studies, reported in Chapter 3.

2.11 Conceptual framework

The following factors located in the literature (see Figure 2), play a role in impacting teacher attitudes towards DI and its use, and therefore the academic achievement of students with additional needs in the senior-secondary context in Australia. It is significant to note that no studies included in the literature review focused purely on upper- or senior-secondary education, focusing instead on general secondary education, and the transferability of contextual information is therefore only partly applicable—hence the importance of this current research study.

Each of the factors presented in the conceptual framework of this research are intertwined. Educational policies influence professional development, with both impacting teachers' attitudes towards DI. Furthermore, it appears that PD focussed on DI, whether DI PD be theoretical or practical, influences teacher attitudes and pedagogical choices within DI, with these choices having a twofold effect on shaping attitudes, and the attitudes themselves impacting pedagogical and curriculum choices. Similarly, the pedagogical choices seemingly influence the self-efficacy of teachers, although it is unclear if self-efficacy, coupled with the attitudes

of teachers, affects student achievement, or whether self-efficacy alone is enough. This unclear link from the reviewed literature is represented by the dotted line in the conceptual framework (figure 2).

Insight into the way teachers' self-efficacy beliefs influence their interpretation of inclusive classrooms is vital in supporting teachers to get DI right (Roose et al., 2019). Given the affective role these factors play in ultimately influencing student achievement, research must therefore focus on the interweaving effect each of these plays, and not just focus on them as standalone factors. Throughout the research presented in this review, student achievement has been reported on based on teachers' attitudes and their mainstream secondary classes. While providing some insight, a thorough review was unable to locate previous research focusing purely on student achievement for additional needs students, specifically those with learning difficulties, in the senior-secondary education context thus far. This has culminated in the following research questions:

2.11.1Research questions

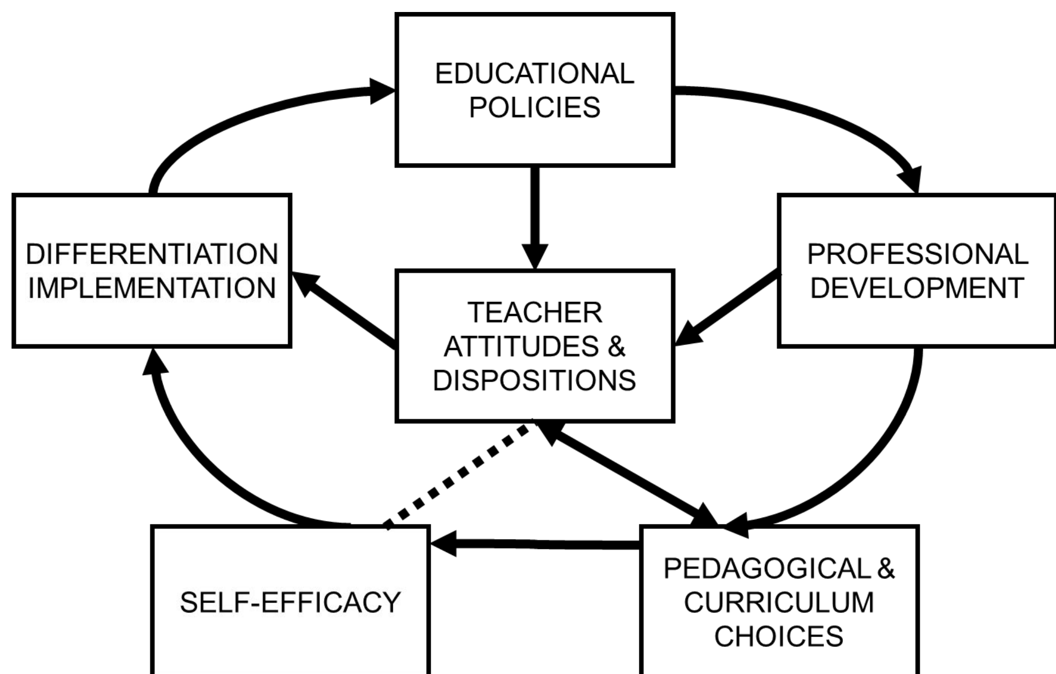
1. What factors shape teacher self-efficacy and attitudes towards the provision of differentiated instruction to meet the needs of students with learning difficulties in senior-secondary schools?
2. How do these factors influence the provision of differentiated instruction?

Figure 2 demonstrates how each of the following themes identified within the literature review, have formed the conceptual framework for investigation towards the research questions. As the literature has demonstrated that these constructs influence each teacher's implementation of DI, the purpose of this framework is to

try to isolate the specific factors within both the teacher attitudes and teacher self-efficacy constructs, to gain a deeper understanding as to what shapes these. Therefore, this research intends to explore what factors influence and impact teacher attitudes and self-efficacy towards DI through the conceptual framework. This framework links to the epistemological stance of this research—social constructionism—as for many social constructionists, "the purpose of research is still to know something about the world and to produce as good representations of the world as possible" (Jørgensen & Phillips, 2002, p. 7). It was important that while this conceptual framework has guided the methodology and methods, the research took a deductive and inductive approach, which is discussed in the next chapter, to ensure other factors not first considered, could emerge from the data.

Figure 2

Conceptual Framework



2.12 Summary

This chapter has established the conceptual framework this research utilised to guide the investigation of teacher attitudes, self-efficacy, and implementation of DI. Each theme within the conceptual framework has been reviewed, to give context to why and how this research was constructed. Students with learning difficulties may see success in a differentiated classroom, however, the paucity of research in senior-secondary education warrants further investigation of how teachers are creating differentiated learning environments for students, and what influences their decisions to differentiate.

CHAPTER 3 METHODOLOGY

3.1 Introduction

In this research, case studies of twelve teachers were conducted to inquire about planning and implementing differentiated instruction (DI). This chapter discusses the case study approach which included a two-phase data collection method, employing a qualitative approach through semi-structured interviews and artefact collection. Artefact collection was used as a way to prompt teacher participants to reflect on their use of DI. Furthermore, the semi-structured interviews allowed the researcher to explore the in-depth attitudes of teachers towards DI. This chapter further discusses the case study approach as a means of giving a voice to teachers and the data collection and analysis processes. The following section justifies the use of a social constructionist paradigm, utilised throughout this research.

3.2 Social constructionism

The researcher situated themselves within a social constructionist paradigm as a way of knowing and gathering data. Social constructionism argues that knowledge is constructed through social interaction and that it is the effect of these interactions that allows people to construct the meaning of one's reality (Allen, 2017). The social constructionist paradigm aligns with the research as it positions the researcher to investigate how teacher attitudes are shaped not only by knowledge but also by teachers' behaviour towards and with their students and colleagues.

Social constructionism dates back over 40 years and, according to Pascale (2011), can be attributed to the work of Berger and Luckmann (1966, as cited in Pascale, 2011) who suggested that people construct their world and reality, not just

through language, but through people and their ongoing interactions and activities with each other. Furthermore, Berger and Luckmann (1966) recognised that the world is shaped by human interaction, building the premise of social constructionism using social realities, identities, and knowledge.

There is a clear distinction between social constructionism and social constructivism, with the latter focusing on just cognitive processes that construct one's reality with the researcher not viewing themselves as part of the research (Thorpe & Holt, 2008). Within the social constructionism paradigm, Lincoln and Guba (2000) argued that the ontological stance a researcher takes in this paradigm is that they acknowledge that multiple truths exist. Similarly, the epistemological stance, as outlined by Lincoln and Guba (2000) argues that reality exists whether or not people are aware of it and that the truth can be reached by asking the right questions.

Furthermore, Allen (2017) argued that social constructionism links cohesively to 'what' and 'how' research questions, which formed the basis for this research. In contrast, however, it has been argued that social constructionism is unusable as there can never be a true result, as every result is just one's reality and contingent upon individual expression (Jørgensen & Phillips, 2002). However, Berger and Luckmann (1966) argued that one's identity will be subjective, and that these identities form a social structure in society. Therefore, while subjective by nature, that does not mean one's reality and beliefs towards DI, are any less valid because of its subjectivity as reality is what we say it is (Jørgensen & Phillips, 2002).

Smit and Humpert (2012) recognised that teacher attitudes play a role in teacher motivation for DI. This research, however, delved deeper into which factors (if any) influence attitudes, and how they do so, contributing to the research

concerning attitude development. This research will be significant as it may show that self-efficacy and collective attitudes have an impact on DI use, highlighting a way forward in educating diverse learners, particularly those in senior-secondary contexts. This research aimed to investigate how factors identified through the conceptual framework—any new revelations—shape teacher attitudes and, therefore, DI use.

Social constructionism views knowledge as being constructed through social interaction and allows the researcher to discern the meaning of an individual's reality (Allen, 2017). This suits both the qualitative approach and the model of inclusion as qualitative methods can use multiple, flexible methodologies to investigate how teacher attitudes are shaped by interactions with students and colleagues. This is because qualitative research regards people as meaning-making beings who construct their meaning and make sense of the world through interpretation (Cohen et al., 2017), a key premise of the social constructionist paradigm.

Furthermore, this research has a strong methodological justification as the study aligns with the research paradigm and the methodology of the interviews, which, according to Hyett et al. (2014) reflects good rigour. Member checking is a key strength in the research as Merriam (1998) stated that to analyse and collect data simultaneously is illuminating and informative. In other words, the observed patterns in attitudes and dispositions of senior-secondary teachers developed from the member checked data, will increase trustworthiness of the research. Furthermore, member checking allows for the use of constant comparative method, whereby the researcher returns to the teacher participants for clarification and checking of data (Snyder, 2012), enhancing credibility. Member checking took the form of viewing and commenting on the verbatim interview transcript, to ensure accuracy in teacher

participants' responses. The next section outlines and justifies the use of a case study methodology in this research.

3.3 Case Study methodology

A case study methodology was chosen for this research as case studies allowed the researcher to study real people in real situations (Cohen et al., 2017), to gain a deeper understanding of how teacher attitudes influence the implementation of DI. Stake (2013) outlined that there are three types of case studies, each of which have different purposes for studying the case. A collective case study—which is most closely aligned with this research—can be used to form a collective understanding of an issue or question (Stake, 2013). Furthermore, a collective case study design, otherwise termed as a multicase study (Bogdan & Biklen, 2011), which uses more than one case study, was selected as this is particularly suited to studying complex phenomena and variables that cannot be separated from the context with which they are set (Yin, 2003). Case studies allowed the researcher to make comparisons and contrasts between each case study, providing further insight into the implementation of DI use (Creswell, 2012). In this research, all twelve teacher participants were individually considered a case. This allowed the researcher to explore differences between each of the teacher participants. This approach was selected instead of creating cases for each school, as the researcher wanted to draw conclusions between teacher participants, rather than between schools. The subsequent sub-section defines the type of case study used in this research, and defines the boundaries the case studies took, to ensure they upheld the elements of a case.

3.3.1 Defining the case

While the definition of what constitutes a case study varies, Yin (2012) argued that a case study is the study of a case in context, however, Merriam (1998) sees case studies as a unit with boundaries that should specify the phenomenon of interest and 'fence in' what they will inquire. For this research the phenomenon of interest consisted of senior-secondary school teachers who do and do not utilise differentiated instruction. This characteristic was not known to the researcher before undertaking the recruitment process. While Yin (2012) strongly argued that his stance on case studies can align with both qualitative or quantitative research, Merriam (1998) maintains a qualitative study should be underpinned by a constructivist approach and she views that reality is constructed by individuals interacting with their social worlds. Her approach more closely aligns to the social constructionist paradigm of this research and thus, was used to guide the construction and application of case study research in this instance.

Furthermore, case studies are used when details and viewpoints of its participants are required (Tellis, 1997; Yin, 2012) which is the foundation behind attitude formation. Moreover, the case study methodology is a descriptive one, using multiple case studies to allow the researcher to exploit what is known about DI and attitude formation. This allowed the researcher to propose further questions to reveal patterns and connections between each of the twelve teacher participants, related to the conceptual framework and/or theoretical construct (Mills et al., 2010). Merriam (1998) outlined that the choice of a case study design aligns well when the researcher wants to gain an understanding of the process of inquiry, rather than the outcome, and was selected to reduce the researcher's pre-existing judgement towards

teachers who differentiated better than others, given that the focus is more on the process, rather than the outcome.

Collective case studies provide a more holistic view of relationships and the effects these have in education (Stark & Torrance, 2005; Sturman, 1994), allowing the researcher to determine their exact position within the paradigm and explore the research questions. Yin (2012) believes case studies are pertinent when the research addresses a descriptive question (the 'what') or an explanatory question (the 'how'), and these were the foundations of the two research questions for this research.

According to Simons (2009) a significant strength of the use of case studies is that they can be used to document and explore multiple perspectives, which the researcher aimed to do by making all twelve teacher participants their own case. Furthermore, case studies "can determine the factors that were critical in the implementation of a programme or policy" (Simons, 2009, p. 23), such as that of the DI framework and school policies of DI. The use of a case study complements the research completed by Godor (2021), who investigated secondary teacher preferences towards differentiation, stating that their research provided an in-depth view towards teacher preferences, but could be supplemented with the use of qualitative research methods, such an interviews. This is pertinent given that there are currently only six studies that have been conducted on DI in Australian secondary schools (Gibbs & McKay, 2021). Further to this, Gibbs and Beamish (2021), who conducted a small-scale study utilising semi-structured interviews from five staff at one Queensland school, outlined the importance for more in-depth studies within Australian secondary schools, which this research study satisfies.

While there are a significant number of definitions as to what constitutes a case study, Simons (2009) concluded that what unifies each of these definitions, is

that there is a commitment to research complex, in-depth, real life situations and scenarios. While this may hold true, Thomas and Myers (2015) delineated two key elements to the anatomy of a case study that allowed the researcher to position themselves towards the use of the collective case study approach.

Firstly, Thomas and Myers (2015) defined the case study as having a *subject*—the focus for the inquiry that provide an analytical frame—which in this research, involved the investigation of senior-secondary teachers who may or may not differentiate. Secondly, Thomas and Myers (2015) outlined the need for a case study to include an *object*—within which the research is conducted and includes the theoretical and scientific basis of the case. This is the conceptual framework of this research, allowing senior-secondary teacher attitudes to be explored against the object of the conceptual framework. The DI framework by Tomlinson (2014), as reviewed in chapter 1, underpins the conceptual framework itself, providing a theoretical structure to be explored.

The qualitative research design was employed to investigate the research questions and conceptual framework and followed a two-phase methods design—through a series of individual interviews. Data collection focused on teacher attitudes, understanding experiences and interpretations of humans in the social world (Cohen et al., 2017), dovetailing with the nature of this research into the formation of teacher attitudes towards DI. The following sub-section justified why a case study was selected as the primary methodology and discusses how rigour was upheld in this research.

3.3.2 Justification and rigour in case study research

The use of collective case studies allowed the elements of the conceptual framework to be explored further, with comparisons to be drawn between teacher participants. There is paucity in the existing research on case study methodology, surrounding its value beyond the case—that is to say, outside of the research itself (Thomas & Myers, 2015). Stenhouse (1980) argued back in the 1980s, however, that value of a case study comes from the culmination of evidence embedded over time. He further added to this by stating that case studies build upon knowledge and theory through different forms of evidence, creating an archive of knowledge. Merriam and Tisdell (2015) agreed with this sentiment, further stating that interviewing is something that takes practice, and can be done well over time.

Crucial to the case study methodology was the use of personal documents, which are becoming more common in qualitative research (Merriam & Tisdell, 2015). The use of personal documents adds to the unique method of this research and the case study methodology itself, through giving senior-secondary teachers a voice in multiple ways. This allowed for greater depth—using the personal documents as a way of verifying teacher perceptions from the semi-structured interviews. Personal documents are discussed later in this chapter.

It is important to note that case study research has both benefits and limitations as a research design, however, Tight (2017) asserted that the benefits and strengths of using a case study, outweigh its limitations. For example, Tight (2017) explained that a significant strength of using a case study is the holistic approach case studies take in understanding a particular concept—that is to say, that case studies aim to understand everything about a particular topic, which is in contrast to other research methods that focus on one or few variables.

This sentiment was mirrored by Simons (2009) who acknowledged that all research methods have strengths and weaknesses, but that case studies have a reputation for being too subjective, highly uncertain and lacking complexity. This research embraces the subjective nature of case studies—there is a need to investigate teachers' attitudes and feelings towards DI, and this can only be done through a subjective investigation. To not embrace the nature of subjectivity, runs the risk of the research becoming too objective and according to Simons (2009), this would deny the presence and social impact of the research, further not honouring the social constructionist paradigm. An advantage of the case study in this research context is that a case study is a bounded system, making the case study more feasible and meaningful, due to the limits of participants and time being implemented.

According to Gomm et al. (2009) and Simons (2009) there is a long standing debate that case study research lacks in generalisability, especially when compared to survey research and other quantitative methods. Gomm et al. (2009) argued that not all case studies need to draw conclusions and that some studies can have intrinsic value, but they take the stance that there are several limitations to this perspective. One of their arguments is that case studies can be considered a microcosm of a part or whole of society. This concept is really built upon the work of Stake and Trumbull (1982) and Stake (1995) who termed this as *naturalistic generalization.*

In 1995, Stake argued that naturalistic generalisations were created when the personal experiences discussed within the case study, allow the reader to feel as though such experiences has have happened to them and that the research findings naturally fall in line with readers' experiences. Similarly, this has been termed *transferability* (Lincoln & Guba, 1985) and both naturalistic generalization and transferability can be achieved through providing thick description and experiential

accounts from participants within the research. Thus, it was important to include descriptive accounts and verbatim comments from the transcribed data within the research, so readers could develop a sense of shared understanding towards DI experiences. Purposeful sampling further heightens the transferability of results, and even the generalisability, through studying participants in a range of contexts, populations, situations and times. The small-scale case study by Gibbs and Beamish (2021) recommended that a further in-depth case study occur, with a larger sample size to increase generalisability, which this research aimed to achieve. The subsequent section outlines how the data were collected in this research, as well as how teacher participants were recruited.

3.4 Data collection

For the purposes of this research, two sources of data were collected, using semi-structured interviews and personal documents (also known as artefacts). This allowed the researcher to explore not just the verbal data from the interviews, but the evidence from the artefacts as a way of validating what teacher participants had discussed. The artefacts allowed the teacher participants to delve deeper into their interpretation of DI and how they use DI in their classrooms. The next sub-section details the teacher participants who formed part of this research. Teacher participants were recruited according to the ethical approval granted by the University of Southern Queensland, as outlined next.

3.4.1 Teacher participants

There was a total of twelve teacher participants in this research. Each teacher participant is described below in table 2 to give context to their responses throughout

this thesis. The 12 recruited teacher participants were from across three different school sites between Adelaide, South Australia, and Brisbane, Queensland. Details of each school is provided in Table 3. Teacher participants were recruited based on a range of factors, which are highlighted in Table 2. The researcher did not recruit teacher participants based on whether he knew that an individual teacher had a strong position or stance on DI. Teacher participants were recruited with varied school experiences, qualifications, and career length. Students in senior-secondary schooling may typically undertake a range of subjects, therefore, a range of subjects taught was an important factor, as to capture to various learning areas teachers plan for and teach in.

The Index of Community Socio-educational Advantage (ICSEA) value has been provided to give context to the educational background and educational advantage of each school, where teacher participants were recruited from. "ICSEA values are calculated on a scale which has a median of 1000 and a standard deviation of 100. ICSEA values largely range from approximately 500 (representing schools with extremely disadvantaged student backgrounds) to about 1300 (representing schools with extremely advantaged student backgrounds)" (Australian Curriculum Assessment and Reporting Authority, 2020, para. 4). To protect the anonymity of the school, each participating school has been provided with a pseudonym and will be referred to as Highview School, Lakes School, and Hills School.

Table 2

Participant Characteristics

Pseudonym	Role	Sex	Number of years of teaching experience	Highest level of education	Curriculum taught	Gender taught	Main subject area
Amber	Teacher	Female	5-10	Bachelor	SACE & AC	Co-Ed	Humanities
Anna	Teacher	Female	5-10	Graduate diploma	SACE	All-Girls	English
Carol	Teacher / Head of Humanities	Female	5-10	Graduate diploma	IBDP	All-Girls	Humanities
Elizabeth	Teacher	Female	20+	Bachelor	QCE & AC	All-Girls	Science
Jane	Teacher / Careers Counsellor	Female	20+	Graduate diploma	SACE	All-Girls	Mathematics
Jennifer	Teacher / Deputy Principal	Female	20+	Masters	SACE	Co-Ed	English
Linda	Teacher	Female	5-10	Masters	QCE & AC	All-Girls	Mathematics
Lisa	Teacher	Female	20+	Bachelor	SACE	All-Girls	Health
Mary	Teacher / Business and Enterprise Coordinator	Female	20+	Graduate diploma	SACE & AC	All-Girls	Humanities
Michael	Teacher	Male	1-5	Bachelor	SACE & AC	All-Girls	Humanities
Sally	Teacher	Female	10-20	Masters	QCE & AC	All-Girls	English
Tina	Teacher	Female	10-20	Masters	SACE	Co-Ed	Science

SACE: South Australian Certificate of Education; AC: Australian Curriculum; and QCE: Queensland Certificate of Education

Table 3

Description of Schools with Pseudonymisation

School	ICSEA Number	Enrolment (at the time of the study)	Co-Ed or Single sex	Area	Number of Participants
Highview	1145	748	Single sex	Metropolitan Adelaide	6
Lakes	1174	906	Single sex	Metropolitan Brisbane	3
Hills	1142	820	Co-Ed	Metropolitan Adelaide	3

Before individual teacher participants were recruited, the researcher reached out to multiple independent schools across Australia, to gain consent to conduct research with teachers from their school. Principals were given the principal information sheet (Appendix 1) and principal consent form (Appendix 2) and were briefed of the benefits and risks for participating teachers. While the school itself was not the focus of this research, as part of upholding ethics, it was important that principals be aware that research may have been conducted with one or more teachers in their school. The participating teachers' identities were not given to the principal, to ensure confidentiality was upheld. After approval was granted by the principal, the researcher asked the principal to put a call out to senior-secondary teachers to contact the researcher if they were interested in participating. In some instances, the researcher asked teacher participants personally through mediums such as LinkedIn or email, as recruiting teacher participants in person was challenging during the COVID19 pandemic. Teacher participants were asked to read the participant information sheet (Appendix 3) and sign and return the participant

consent form (Appendix 4) to the researcher before each interview was scheduled. The following sub-section outlines how data were collected through semi-structured interviews and what these interviews consisted of.

3.4.2 Data collection through semi-structured interviews

Data were collected through 12 semi-structured interviews with senior-secondary education teachers across independent schools across Australia. Independent schools were selected as the researcher could gain Principal permission, without having to gain ethical approval from the Department of Education or Catholic education sectors. This was decided as the pandemic made it challenging to receive ethical approval for Department and Catholic education schools. Patton (2015) stated that the sole purpose of an interview is to find out what is "in and on someone else's mind… [and to] find out from them those things we cannot directly observe…allow[ing] us to enter into the other person's perspective" (p. 426). This method was particularly important for this research, as while it can be observed that teachers choose to engage in differentiation or not in their classroom by a researcher, the researcher would have struggled to obtain the in-depth attitudinal factors of these teachers without conducting interviews.

Semi-structured interviews were centred around a set of questions and a prompt(s) that allowed the researcher to gain deeper information, whilst reassuring the speaker that the researcher was listening (Olsen, 2012). Semi-structured interviews were selected, as they allowed teacher participants to feel comfortable, encouraging them to speak freely and express their perspective in a more effective manner, when compared with structured interviews (Kvale & Brinkmann, 2009). A semi-structured interview protocol was developed (Appendix 5) based on the aims

and objectives of the research and the questions focussed on the elements of the conceptual framework developed from the reviewed literature. According to Brinkmann and Kvale (2018) and Morris (2015), developing an effective interview guide is crucial to the success of the semi-structured interview, as while there is scope for the researcher to digress and discuss unexpected aspects that teacher participants mention, the guide allowed all major topics to be discovered. Thus, all aspects related to the conceptual framework were discussed.

According to Stollman et al. (2021) most of the studies surrounding DI utilise observations and semi-structured interviews related to teacher knowledge and practices of DI, however, they believe that more focus needs to be on methods understanding teachers' unconscious cognitions during teacher practices. Therefore, this notion influenced the decision to include evidence artefacts, such as lesson plans, to allow teacher participants to delve deeper into their DI practices, during semi-structured interviews. The semi-structured interview complemented the use of the social constructionist paradigm as "the interview attempts to understand themes of the lived daily world of the subjects' own perspectives" (Brinkmann & Kvale, 2018, p. 2), contributing to the nature of the subjective real world social constructionism takes. As part of the semi-structured interviews, teacher participants were asked to bring along a document that highlighted DI implementation, and this is discussed in the following sub-section.

3.4.3 Evidence artefacts

Teacher participants were asked to bring to the interview, a document that highlighted their use of what they believed DI to be, as supplementary evidence to the semi-structured interviews. The researcher provided some suggestions to guide

teacher participants in what to bring. For example, the researcher suggested that unit plans, unit sequences, lesson plans, assessment tasks, or any other documented evidence of DI could be brought to the interview. Evidence artefacts, also known as personal documents, allowed for a deeper narrative to be explored and their use has been Increasingly utilised in qualitative research (Bogdan & Biklen, 2011). Furthermore, evidence artefacts are largely a natural part of the research setting (Merriam & Tisdell, 2015) and "describes an individual's actions, experiences and beliefs" (Bogdan & Biklen, 2011, p. 133). Teacher participants were asked to discuss where DI was evidenced in their artefacts. The teacher participants either spoke to their documents alongside the researcher (if the interview was conducted in person), or via Zoom screenshare (if conducted online). Here the teacher participants were able to go through their evidence artefacts, delving deeper into their interpretation and implementation of DI. The artefacts were not coded as part of the data coding process, as the researcher wanted them to be used to support discussion in the interviews.

Merriam and Tisdell (2015) argued that personal documents are like observations, in that they give the researcher a snapshot into the teacher participant's personal perspective and what they think is important, allowing the researcher to explore the value teachers place on DI. While subjective by nature, personal documents reflect the subjective views and perceptions of their creators and that makes them useful in a case study (Berg & Lune, 2017). These documents were used as prompts towards the conclusion of the interview, as a means for the teacher participants to discuss the ways they implement DI and explain how this is specifically actioned. The subsequent section outlines the procedure for data collection.

3.5 Procedure

Data collection took place with a two-phase approach and allowed the researcher to explain findings from the series of semi-structured interviews (Phase 1) through an interpretation phase (Phase 2). This approach is often used to expand upon interesting or perplexing results (DeCuir-Gunby & Schutz, 2017). Phase 2 ensured a final interpretation of the data, however, the collection and analysis of data occurred simultaneously during phase 1, as Merriam (1998) stated that it is important that in qualitative research, that data collection must be recursive and dynamic, recognising that data analysis becomes more intense as the research progressive. This knowledge guided the decision to include Phase 2, to verify final interpretations.

Furthermore, to ensure trustworthiness was heightened within the research, phase 1 consisted of member checking, whereby interviewed teacher participants were able to check and approve particular aspects of the data they provided (Carlson, 2010; Merriam, 1998) and was used as a way of finding out if teacher participants' experiences align with the data collected (Curtin & Fossey, 2007). The next section details in phase 1 of the data collection procedure, which was the conducting of semi-structured interviews.

3.6 Phase 1 (semi-structured interviews)

Qualitative data were collected through semi-structured interviews following the two-phase case study design outlined in Figure 3. This allowed the researcher to be immersed in the data, further sustaining the social constructionist paradigm. The purpose of the interviews was to explore common meaning, explanations and

interpretations of new and existing themes that emerge from the interviews. Each interview followed the "funnel" approach: they began by taking a broad perspective, to ensure the engagement of teacher participants, before narrowing in on questions related to —and more targeted towards—the research question. For example, teacher participants were first asked demographic questions about their teaching career, subjects taught and general knowledge of DI. Questions were then further narrowed and connected to elements of the conceptual framework. The narrower questions were more challenging and had teacher participants think on a deeper level, with their connection and use of the DI framework.

Teacher participants were asked to bring along their evidence artefacts to the interview, as a means of reflecting their interpretation of DI within their current teaching context. Some documents included lesson plans, task sheets, curriculum syllabus documents and learning and assessment plans for the academic year. The interviews were conducted face-to-face in one room, however, not all teacher participants were from the same city, thus, some teacher participants were able to participate through Zoom, with the audio recording of the Zoom meeting used for transcription services. Teacher participants who participated on Zoom were asked permission to record audio using the Zoom recording function.

Purposeful sampling was used to recruit teacher participants, as random sampling in a small site, such as a school, is usually less feasible (Cohen et al., 2017), however, many teacher participants were not known to the researcher. Furthermore, purposeful sampling allowed the researcher to gather richer data, as this type of sampling permitted the researcher to choose teacher participants who contribute extensive knowledge (Emmel, 2013; Patton, 1990). To reduce the bias that comes with purposive sampling, teacher participants were not selected on their

perceived abilities towards utilising DI, but rather through ensuring a range of demographic factors were met, such as: subject areas; teaching experience (number of years); gender; year level(s) taught within senior-secondary years (10-12). This safeguarded an unbiased range of teachers were included within the purposive sample and was a recommendation in the study by Zerai et al. (2021) who noted in their study that teachers of different subject areas had different teaching methods and therefore, may offer different opinions to the teaching methods related to the DI framework.

Teachers were selected from three Independent Schools across Australia, given that Human Research Ethics Approval (Appendix 6) from the University of Southern Queensland was for independent schools. Therefore, teacher participants from Catholic and Department schools were not able to participate in the research. The goal of recruiting twelve teacher participants, as with semi-structured interviews, was to achieve the same deep level of knowledge and understanding as the teacher participants around their implementation of DI. Furthermore, interviewing senior-secondary teachers allowed the researcher to uncover what is usually hidden from ordinary view and to discover more reflective understandings on the nature of DI implementation. The interviews followed a phenomenological approach, enabling the researcher to understand teacher participants' thoughts, perceptions and attitudes towards DI, as this approach focuses on the experiences of teacher participants and the meanings they make of them (Roulston & Choi, 2018).

Each teacher selected for an interview was briefed and provided signed consent, through a written or electronic consent form, before conducting the interview. They were further informed of the risks, nature of the study, and benefits of the research before the interview was conducted, which were also outlined in the

teacher participant information sheet. Semi-structured interviews were chosen because a conceptual framework with possible factors for exploration was created, and semi-structured interviews suits this well. Furthermore, Merriam (1998) noted that interviews are the most common methodological approach in case study research allowing for wholistic description and explanation of data.

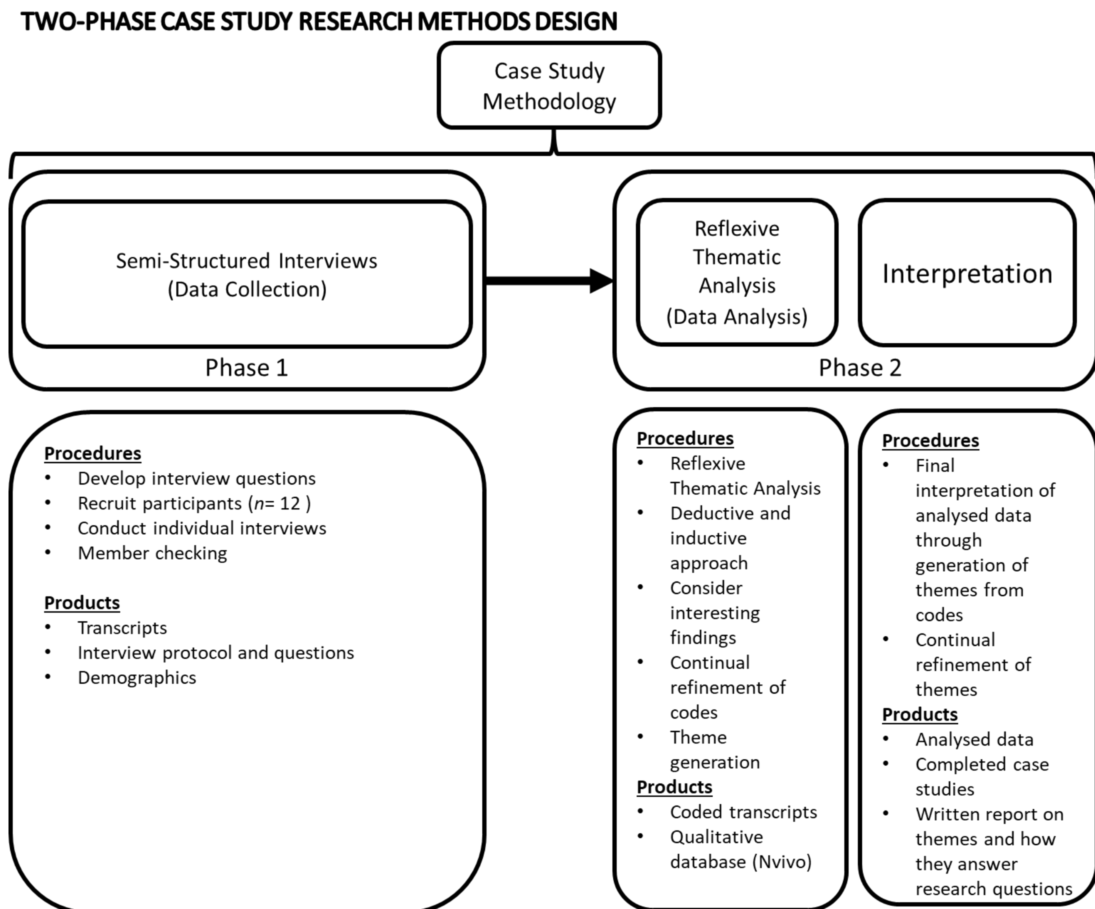
According to Given (2008), semi-structured interviews are the best format when concepts are well understood. It is important that when conducting individual interviews, that participants are exposed to short, open-ended questions that allow the participant to tell their story, as this allowed the researcher to gain an in-depth understanding of their attitudes towards DI while further discussing how their experiences have shaped their attitudes.

Teacher participants were asked to discuss their planning documents and how these reflect their use of DI in their classroom contexts. This provided even greater insight into why teachers choose to utilise DI or not, whilst allowing the researcher to gain a deeper understanding of teacher participants' interpretation of DI and teachers' reasoning behind their planning. All interviews were transcribed by Pacific Transcription and transcribed in a verbatim manner. An external transcription provider was used for transcription, and transcripts were stored and sent using SSL encryption for maximum security as per institutional ethics. At the completion of the transcription, teacher participants were provided with a copy of the transcript and given two-weeks to check the interview accurately reflected what they had said, giving them time to request any changes. At the conclusion of the two-weeks, the transcript was officially included in the research study, with no further changes to be made. No teacher participants requested changes to their verbatim script. Transcripts

and voice recordings were stored according to the researcher's data management plan.

Figure 3

Structure of the Two-Phase Case Study Design



3.7 Phase 2 (data analysis and interpretation through reflexive thematic analysis)

A reflexive thematic analysis (RTA) approach by Braun and Clarke (2021) was employed to analyse the individual interviews and allowed the researcher to identify common themes and topics that appeared repeatedly; this then informed the elements in the original conceptual framework. The use of RTA is discussed in further detail in the data analysis section of this chapter. The RTA involved coding the interview transcripts into categories from new and existing themes within the

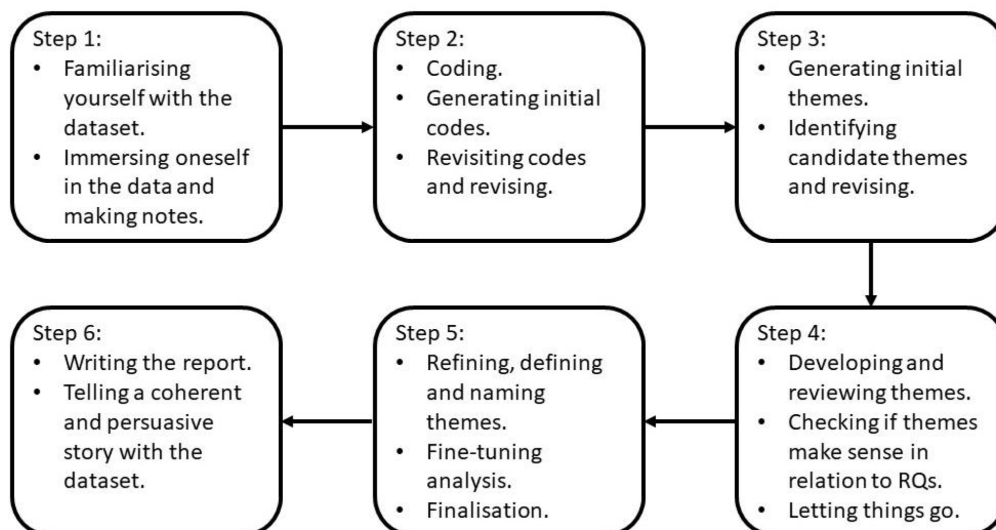
conceptual framework. Therefore, both an inductive and a deductive approach was used for the core themes, permitting the researcher to be open to new and unexpected findings.

Qualitative data were analysed using NVivo12 (*QSR International Pty Ltd*, 2020). Merriam (1998) stated that interpretation of data can include constructing themes, organising themes into categories and sub-categories, providing a richly interpretive narrative (Brown, 2008). This research utilised this method of interpretation given how closely the work from Merriam (1998) aligns with the social constructionist paradigm of this research.

Data were analysed following the guidelines set out by Braun and Clarke (2021) for RTA, which are practical guidelines based on their earlier work for a six-step thematic analysis (Braun & Clarke, 2006). The steps are outlined in Figure 4, with further explanation of how these steps were contextualised to the research itself.

Figure 4

Steps in Reflexive Thematic Analysis (Braun & Clarke, 2021)



3.7.1 Step 1 familiarisation with the dataset

In this step, the researcher first familiarised themselves with the dataset by listening to each audio recording of the 12 interviews and reading and re-reading each of the transcripts. This allowed for any transcription errors to be corrected if they were not acknowledged during the member-checking process employed earlier in the research. This phase made the researcher more cognizant, not only of what was said in each of the interviews, but how the data was said, to ensure accuracy in representation of what teacher participants were saying.

The researcher started a reflexive journal, which is a key element in RTA and is a way of documenting and storing thoughts for "subsequent reflection, interrogation, and meaning-making" (Braun & Clarke, 2021, p. 19). The goal for this journal was to look back at interesting points, key decisions made, and to question these at later dates to engage the researcher with the data at a deeper level. This was crucial as the goal of the researcher was to go beyond the semantic codes and look deeper at latent codes. Braun and Clarke (2021) outlined the importance of delving deeper in the RTA and to create codes that represent the data in a more meaningful way.

Furthermore, the reflexive journal meant an audit trail of the data could be kept, which according to Lincoln and Guba (1985) supports the trustworthiness of a research study. The reflexive journal was used to question and reflect on the researcher's own biases whilst coding, and to allow interesting findings to be noted for the researcher to come back to. Similarly, it allowed the researcher to make note of any themes that may have started to emerge as interview coding progressed. This process was extremely valuable; not only did the researcher become more self-aware of the biases they held, but they were also able to decipher ways in which data could

be coded differently, at the coding stage, to avoid prior assumptions and understandings impact the data interpretation. By the end of the first stage, the researcher had a deep understanding of each of the teacher participant's knowledge, beliefs, and attitudes. Step 2, which involved coding of the data is outlined in the following sub-section.

3.7.2 Step 2 coding

The use of RTA (Braun & Clarke, 2021) allowed for both inductive and deductive coding approach to be taken. Deductive coding allowed the researcher to keep the core themes from the conceptual framework at the forefront of the mind when coding, to ensure that initial codes were relevant to the research questions and conceptual framework. That being said, however, it was important that an inductive approach was taken, to ensure that the data was not forced into pre-existing themes. The researcher wanted to keep an open-mind and to ensure that if there were any latent variables, that the data had a chance to be coded into an area that best fit where it was suited, thus, an inductive approach was also taken.

Initially, the researcher started to code quite deductively according to the conceptual framework, however, it was recognised that this approach felt too forced and that codes were being generated too shallowly. After coding the first interview, the researcher made the decision to re-start the coding process and was more careful to use both a deductive and inductive approach, to ensure themes could be generated and were not limited to the conceptual framework.

The initial coding of the data led to a significant number of codes; however, the researcher was able to consolidate these as refining occurred, particularly through the use of a thematic map. Refining meant that the researcher had to

complete more than one round of coding, and to revisit questions asked within the reflexive journal, to ensure that the way data had been coded was how the researcher best interpreted what the data was representing. For example, one of the initial codes was ‘positives of DI implementation’, however, as the coding process progressed, the researcher found this code to be too broad. Therefore, this code was separated further into other codes, to best capture what the data was reflecting. Data were coded between January 2022 and May 2022. Step 3, generating initial themes, is discussed in the next sub-section.

3.7.3 Step 3 generating initial themes

The researcher had developed a total of 600 initial codes across the twelve interviews, collapsed into 24 final codes. It was important to the researcher not to generate themes too early or “fit” the research into existing elements within the conceptual framework, as to ensure the data was not forced into the conceptual framework. Therefore, there were a significant number of initial codes. Coding was completed using NVivo12, while generation of themes was completed through cutting out paper and organising the codes into categories related to the research question. This process occurred multiple times, with the researcher aiming to ensure that data fit correctly in the relevant theme. Refinement included continual reference back to the reflexive journal, which challenged the researcher’s thinking, as the coding process was occurring.

Codes were organised into thematic maps using both NVivo12 software and Microsoft Visio. The researcher was cognizant not to code data based on the interview questions, but to construct meaning from the clustered codes. This process involved building up each of the clusters, moving them around and adding and

removing codes to ensure best fit. For example, it was found that the teacher participants regarded learning difficulties to be encompassing of a large proportion of definable and non-definable specifics, such as dyslexia, mental health, and wellbeing issues. Similarly, it was also ascertained that the teachers knew that they must differentiate for all students. The fact that teachers must differentiate for all—which requires knowing students and their readiness levels—yet that learning difficulties can be undefinable in many instances— makes it challenging for teachers to know where students are at in their learning. This challenge creates tension between knowing one needs to differentiate, but struggling to do so for the broad category of students with learning difficulties. This construction of an accurate theme took many refined attempts and repeated exploration back into the data.

Braun and Clarke (2021) outlined the importance of generating initial themes within step 3, but outlined that the themes are considered candidate themes, each vying for a place in the final thesis. They further stated that themes may change or be added as the refinement process occurs in step 4.

Data clusters were reorganised into separate thematic maps for each candidate theme. The researcher wanted to ensure that the initial themes worked within the full data set together, but also, had clear boundaries as to where each theme started and finished. In many instances, the themes overlapped, reflecting that they had a common story and connected with each other. From there, the data clusters and initial themes were regrouped back as one large thematic map, this time, with names for initial themes. These initial themes included: a) the "special education" box, (b) beyond the constraints, c) labels as guidance for DI, d) doing the bare minimum with DI, e) all about the students. The criteria for developing and reviewing themes, is discussed in the next sub-section.

3.7.4 Step 4 developing and reviewing themes

It was important that the researcher applied criteria for judging the quality of the candidate themes, to ensure that codes and sub-themes accurately reflected the overall theme for which they were part of. This was to ensure all themes were accurate representations of the data and provided answers to the research questions. This was one of the reasons criteria used by Braun and Clarke (2012) and Patton (1990) were used. For example. Braun and Clarke (2012, as cited in Byrne, 2021) outlined five key questions to consider when reviewing potential themes. These are:

- Is this a theme (it could be just as code)?
- If it is a theme, what is the quality of this theme (does it tell me something useful about the data set and my research question)?
- What are the boundaries of this theme (what does it include and exclude)?
- Are there enough (meaningful) data to support this theme (is the theme thin or thick)?
- Are the data too diverse and wide ranging (does the theme lack coherence)?

Each of these questions formed the basis for whether a candidate theme was chosen to be a final theme, incorporated into other themes, or disbanded. Braun et al. (2018) outlined the importance of "letting go" to themes, subthemes or codes that do not fit within the interpretation of data and that not all data need to be themed for a RTA to be successful. Patton (1990) developed dual criteria for judging categories known as internal homogeneity and external heterogeneity to ensure that there is

homogeneity within the themes themselves, and heterogeneity among each of the different themes. Both Patton (1990) and Braun and Clarke (2012) provided a basis for reviewing candidate themes and this resulted in some themes being removed entirely.

After reviewing each of the themes against the criteria by Braun & Clarke (2021), it was decided that the fifth theme—doing the bare minimum with DI—had too much overlap with other candidate themes and was incorporated into other themes. This resulted in some of the sub-themes also merging with other central themes. The next step in the RTA, refining, defining, and naming themes, is discussed further.

3.7.5 Step 5 refining, defining and naming themes

It was important to the researcher that each of the central themes captured the dataset, as well as the sub-themes, thus, names for the themes changed the more the researcher started to write the results. This was since the researcher was often still refining themes as the results were being written. Sub-themes were often re-ordered to ensure that the sub-themes provided a convincing story to the reader and were logically presented in a way that the reader could easily identify the factors that influence teachers' attitudes and self-efficacy towards DI. Similarly, as the results chapter became more refined, names for each of the themes evolved over time to better represent what each sub-theme was conveying. The final four refined themes at the very early stages of the results write up included:

- students who receive a differentiated classroom
- knowing how to differentiate versus uncertainty in differentiated instruction

- the benefits of differentiated instruction versus the negatives of differentiation
- trusting relationships and knowing students are key for effective differentiation

The final step of RTA, the writing up of the report, is discussed in the following sub-section. This included further refinement of the themes mentioned earlier, particularly with the renaming of overarching themes.

3.7.6 Step 6 writing up

As part of the final step, the report was written based on the finalised themes. Braun and Clarke (2021) outlined that often this step is not completed last, and that it can be done in unison with theme refining. This was the case for this research. The researcher decided to write the report as theme refining was occurring, as they found that during the write up, they were becoming more immersed and familiar with the dataset. This further led to the deconstruction and reconstruction of existing themes. The following sub-section provides justification for the use of RTA in this research. The deconstruction and reconstruction of themes occurred over several months as the thesis was being written. The researcher felt that some of the themes did not accurately convey all of the sub-themes encased in its overarching theme and thus, found it challenging to name each theme accordingly. The sub-themes, however, are presented in a unique way, in that they build upon one another in a logical sequence, building a story as the reader reads on. Hence, the overarching theme becomes clearer when all sub-themes have been read.

3.7.7 Justification for reflexive thematic analysis

Reflexive thematic analysis (RTA) was used as it aligns to exploration of the lived experiences of particular social groups (Braun et al., 2019), which, in this instance, were senior-secondary teachers. Furthermore, Braun et al. (2019) outlined that RTA is particularly useful when exploring factors that influence or underpin a particular phenomenon, which in this research, were the factors that influence senior-secondary teachers' self-efficacy and implementation of DI. The goal for RTA is not to summarise data, but for the researcher to take on the role of storyteller and interpret the data based on the research questions. Creating a story for the reader was achieved through thick description of teacher participant responses, as well as the construction of themes and sub-themes that build upon one another.

Similarly, according to Nowell et al. (2017) trustworthiness in a RTA can be obtained in a number of ways and this research has aimed to create a study that is high in trustworthiness. For example, according to Braun and Clarke (2021) the use of a reflexive journal meant an audit trail could be established of the code generation, with a final coding map designed to reflect the researcher's decisions. This was important as it is recognised that in RTA that a researcher interprets the data in their own ways, thus, creating an audit trail allows others outside of the research to be aware of the researcher's decisions. The following section provides a summary of key points made from this chapter.

3.8 Summary

In this chapter, the research paradigm of social constructionism was discussed. This discussion allowed the researcher to take a clear position within the research, with the researcher recognising that teachers construct their world both through knowledge and social interactions. This led to the decision regarding the

case study methodology and use of semi-structured interviews and evidence artefacts as a way of constructing and bounding each case. These two methods were combined to strengthen and deepen teachers' responses to the interview questions. The rationale for this research was presented.

Further details of data collection and analysis have been provided in this chapter, including the two phases that guided this research. Similarly, the six steps of data analysis through a RTA were detailed and contextualised to this research. Coding and refining led to the creation of themes that could be used to answer the research questions. The next chapter focuses on the results from the RTA. Each theme is presented, along with transcript excerpts of the data, to allow the reader to be immersed in the data and to support and provide evidence for each theme. Sub-themes are strategically placed in an order than allows the reader to accurately understand the construction of the overarching theme.

CHAPTER 4: RESULTS

4.1 Introduction

Chapter 4 outlines the key themes which emerged from the reflexive thematic analysis of the 12 interviews with senior-secondary school teachers. Data were initially organised into codes using NVivo12 software with 24 final codes. Further analysis through deconstructing and reconstructing candidate themes, resulted in four themes. These core themes are 1) the actioning of differentiated instruction for all students, 2) the impact of learning difficulties on differentiated instruction effectiveness, 3) the impact of partially upholding the differentiated instruction framework, and 4) relationships and knowledge of students. The results are presented with sub-themes that align within each overarching theme to illuminate the thinking of the researcher and show how these four themes were constructed. Reading the sub-themes in order of presentation allows the reader to understand the researcher's thinking clearly, behind the construction of each theme. The results draw comparisons between each of the twelve teacher participants, who were represented as their own case. These comparisons allowed the data to be reported as a collective case study, comparing each of the teacher participants to one another. The following section discusses the results pertaining to the first theme— 'the impact of learning difficulties on differentiated instruction effectiveness'.

4.2 Theme 1: the actioning of differentiated instruction for all students

The first theme—'the actioning of differentiated instruction for all students'—includes results pertaining to the various constraints of DI, the impact

school leadership teams have on teacher professional development (PD) in DI and student access to a differentiated classroom, as well as and the absence of clear policy for DI. This theme encapsulates the results, which highlighted that teachers believe DI is for all students, however, they struggle to differentiate for all students, thus, result in differentiating mainly for students with special needs.

Results reflect that these factors may contribute to DI being viewed as a practice only necessary for special education students, even though teachers believe DI is for all students. Each sub-theme has been discussed with transcript excerpts detailing various perspectives on this theme. The sub-themes are presented logically to build a story of the overarching theme. The concluding statement explores contributing factors to negative teacher attitudes towards DI in the senior-secondary context. The following sub-theme discusses the importance teacher participants place on differentiated instruction for all students.

4.2.1 Differentiated instruction is for all students

Eleven out of the twelve teacher participants commented on the belief that DI was for all students, therefore these teachers are conscious that no student is exempt from a differentiated classroom. The teachers noted that their classroom comprised diverse students—from gifted students to students with learning difficulties—and that each student was entitled to a differentiated learning environment. This was important as the years of teaching experience varied among the teacher participants, from less than five years to more than 20 years. Therefore, teaching experience did not impact teachers' beliefs about DI's applicability to all students. While each of the eleven teachers stated that they knew DI was for all, some either stated this

verbatim or used the example of describing the range of needs in their classroom. For example, Linda said that she differentiated for all:

> So, for me it's providing instruction at a level that the student can access, whether that means they're—I've got accelerated kids that are doing Year 12 maths that are only in Year 11, whether it's at that level, or kids that have significant learning difficulties and they need a lot of support to get there. (Linda, QCE & AC, Mathematics)

In contrast, Anna stated, "it's for everyone. Differentiation is for every student." Thus, Linda differentiates for her students when she knows their needs, compared with Anna who differentiates regardless of her students' needs. Likewise, Mary affirmed:

> So for me, it comes back to the foundation of knowing my students, all right. So that means that every student in my classroom is an individual, and their learning potential has to be individualised…so it's that balance of teaching a group of students, but every student feeling that they've got a connection with me that is valuable. That I am willing to support each individual to be able to progress their learning. (Mary, SACE & AC, Humanities)

Compared to Linda and Anna's views, Mary still considered DI applicable to all students; however, instead of describing her students' various needs, she commented that an individual approach to student learning is equally paramount. Her interpretation of DI includes individual instruction. There is a common view among eleven of the twelve teachers, interviewed that DI is a right for all students. The twelfth participant did not state whether they believed DI to be a right for all students. For less than a quarter of teacher participants, however, it is important to consider the groups of learners who may need a further adjustment (e.g., students

with learning difficulties). Mary emphasised the need for individual learning progress. In the next section, constraints to differentiating, as outlined by teacher participants will be discussed.

4.2.2 Constraints in differentiating for all students

While the eleven teachers stated that they knew DI was for all students, they referred to various constraints that appear to have hindered their ability to differentiate for all learners. Nearly all teachers outlined that the constraints arose from their current curriculum framework (e.g., SACE, QCE or the IBDP). The teachers outlined these constraints and elaborated on how such frameworks lead them to struggle to differentiate by product, process, content and/or environment. Linda suggested that her struggle in differentiating was more related to differentiation by product and content, saying:

> It's really hard to differentiate in the senior [context], because the syllabus is not changeable in any way, the assessment is not changeable in any way, with some really limited restrictions around like we can change some timing and things like that. But even with that, QCAA [Queensland Curriculum and Assessment Authority] are really cracking down on that this year. (Linda, QCE & AC, Mathematics)

Equally, Sally described the assessment differentiation within her subjects as challenging, stating that differentiation in senior-schooling was more difficult than in junior and middle school classrooms. Sally affirmed:

> Obviously, the assessment differentiation, that is something that can't be touched in senior. Whereas there is a lot more flexibility to differentiate in junior—in certainly the middle school curriculum. There is a lot more

flexibility to differentiate the assessment. Then senior, obviously there is not the scope for that. (Sally, QCE & AC, English)

While Linda and Sally teach different subjects, they both teach within the QCE framework and experience similar difficulties in differentiating assessment. Similarly, Tina, who teaches SACE Science subjects, agreed with the sentiments of Linda and Sally, although she discussed her struggle to differentiate for assessment. She asserted:

> [The] national curriculum in Year 10 and then SACE in Year 11 and 12, you really just have to follow the guidelines. So with our practical work and our assignments we can be a little bit more flexible, but with tests and exams you've just got to teach the content. (Tina, SACE, Science)

Correspondingly, Carol, who teaches the IBDP in humanities subjects, believed that with an 80% exam there is no room for differentiation at all, stating that she has a sense of being "locked in" to teaching in an un-differentiated classroom as much as her students do. Carol expressed a reduction of choice in differentiating both assessment and content. She stated:

> You can't [differentiate]. The IB forces you to teach the test. It drives me crazy. Because I hate doing that, and I don't normally teach that way, but I haven't really got any choice… I'm locked into these exams. They're awful things. I wish that we could change it. (Carol, IBDP, Humanities)

Linda, Sally, Tina, and Carol each outlined different constraints that they state result from the curriculum framework in which they are working. Over three quarters of the teachers expressed difficulties in differentiating within their subject areas and the curriculum framework they work within, reflecting common difficulties among these teachers.

In contrast to difficulties arising from subject areas and curriculum frameworks, problematic class sizes and insufficient time to differentiate and prepare were discussed. Carol outlined that class sizes impacted her ability to differentiate consistently. She further stated:

> I think that the size of the class is key here. So, when I hear academics saying class size doesn't matter, it makes me so cross. I'm like, well it might not matter for the garden variety kid, but it [obscenity] matters for the kid that's struggling. (Carol, IBDP, Humanities)

In contrast to Carol, Elizabeth stated that time was a competing factor in implementing DI effectively. She reported:

> I think it's time. I think it's actually time factor of under the pump to cover the massive amount of content in a very short period of time. I think it's a time factor...You just don't have time to try something and then go oh [obscenity]—sorry—we've got no time. (Elizabeth, QCE & AC, Science)

Lisa also stated that time was a big constraint for differentiation, outlining that inadequate time led to inadequate planning for DI. She held a similar view to Elizabeth, asserting:

> Yep, I guess the difficulty is that it probably does take more planning. You probably need I guess—hmm. If not a wider repertoire of resources at your immediate fingertips…But I guess the payoff in doing that [planning for DI] is that your lesson can run smoother. So it's worth it but it does take a bit more planning. (Lisa, SACE, Health)

Having less than five years of teaching experience, Michael's response aligns with Elizabeth and Lisa, who taught for more than 20 years each, stating, "it's

challenging to come up with ideas I guess, it just means more time and preparation but it's not that much longer."

Further, nearly half of the teachers stated they could not invest in ways to improve their DI knowledge and application. Michael commented, "it can be difficult to learn more about differentiation when time is so limited." Regardless of teaching experience, insufficient time and preparation impeded effective differentiating. In the next section, how school leadership teams influence teacher PD in DI will be discussed, as well as the impact leadership teams have on students' access to a differentiated classroom.

4.2.3 Impact of school leadership teams

Each of the twelve teachers held various views about whether their school leadership teams supported the use of DI in their classrooms. Half of the teachers stated that their school leadership teams supported them in implementing DI. Others, however, revealed that their leadership teams supported them in theory, not through PD and in implementing DI practically. For example, Carol, who had taught at the same school for over 10 years, stated that DI had been a sporadic focus for the school, supported solely by leaders who were passionate about DI. She specified:

> Honestly, I think that the revolving door of leadership has really gotten in the way of that. I think [a previous colleague], if she had become deputy, would've had a really good program running. Because it was her absolute focus. She's the last leader I can think of who really burned a flame for differentiation. (Carol, IBDP, Humanities)

Mary, Carol's colleague at Highview School, expressed the same view: "I think because of the turnover in leadership, it's probably lost a bit of traction, to be

fair.” While over half of the teacher participants stated that leadership support was sporadic, others expressed that support was more so in encouraging the use of DI rather than targeted and sustained professional learning. For example, Jane and Mary stated that leadership teams were encouraging: “I think they’re absolutely, positively encouraging” and “they certainly do encourage it as well.” Mary also commented, “theoretically, the culture is that we should differentiate.” Therefore, while leadership teams supported DI, these teachers still wished for a deeper level of support through practical and professional development.

Teacher participants in all three schools asserted that when PD was offered by leadership, the PD mainly had a focus on special education or learning support. For example, Amber, who works at Hills School, stated that PD was sporadic and tended to focus more on differentiation for types of diverse learners. For example, students with Autism Spectrum Disorder or Selective Mutism. When asked further about whether the leadership team had run PD, she outlined, “kind of, maybe for some instances…my last two schools have provided PD opportunities for those [additional needs] students. Also, I think learning a lot from Individual Support Plans (ISPs), lots of schools use a different thing.” Sally, who works at Lakes School, held a similar view in that the PD her school provided for DI was targeted towards a specific demographic of students. She asserted:

> We had a whole school wide PD about differentiation for EAL/D [English as an Additional Language or Dialect] and I’ve led some of that EAL/D differentiation stuff in a previous role here. But we haven’t looked at it as a whole concept for our whole suite of learners and at its core what it means…[which is] what it should [be doing]. We’ve looked at pockets of it rather than from a broader perspective. (Sally, QCE & AC, English)

Lisa, who worked at Highview School, shared a similar view with Amber (From Hills School) and Sally (from Lakes School) in her statement, outlining that the PD she had received on DI was targeted towards students with Individual Learning Plans (ILPs). Furthermore, the PD was focused on how to differentiate through ways outlined in these ILPs:

> There's a lot of really specific information on student's ILPs. About how to differentiate for particular students. So, I think yeah, that's really helpful for staff. I think …there is a culture of you know, you look at your class list and then you look at you know, the list of students who might need differentiation and yeah, there's definitely a culture of that that is just what you do to support the student. (Lisa, SACE, Health)

The statements by Carol, Mary, Jane, Amber, Sally, and Lisa, from all three schools, reflect that the focus of DI in their respective schools has been sporadic and mainly focused on sub-groups of students with special needs. For example, EAL/D students or students with autism spectrum disorder. Hence, these teachers are viewing DI as for specific student sub-groups. In the next section, results pertaining to the development of a deficit view of students, by teachers, will be discussed.

4.2.4 The development of a deficit view of students by teachers

Eleven of the 12 teachers asserted that they knew that DI was for all students; however, they outlined constraints in their framework. These constraints, coupled with a perceived shortfall in leadership support for practical differentiation and a particular emphasis on certain demographics of students—such as EAL/D or students with learning difficulties—reflect that these teachers implement DI for certain demographics of students in their classrooms. Jane expressed that she was

only able to differentiate for underperforming students and that she was not able to differentiate for high-achieving learners:

> I think it's [DI] more pertinent to them [lower end learners]. Yeah. Whereas I know it is supposed to be differentiated at the top end as well. I don't get a lot of chance of practising that bit. You can within your scope. But not a lot. (Jane, SACE, Mathematics)

Jane knows DI is for all learners, however, she focuses on ensuring that her "lower-end" learners are successful and pass the course. She stated that she taught a mathematics subject, for which a passing grade was mandatory to receive a school certificate. Elizabeth remembered how she differentiated for just one student with poor working memory in her class. She revealed:

> So I think—this is for one particular student. This is the girl that doesn't have much of a working memory…So with this particular [learner management] platform, you can modify the lessons but you can also modify one and share it with one student. That's slightly different. So I change hers a little bit. So there's some challenge questions so I take them out. (Elizabeth, QCE & AC, Science)

Less than a quarter of teacher participants acknowledged that students who were considered less academically able were often enrolled in subjects perceived to be "easier" to help students get "over the line", such as Jane's Essential Mathematics class. Lisa discussed a time when she differentiated for students completing a different SACE subject—Community Studies B—that ran alongside her Food and Hospitality classroom. She differentiated for two students diagnosed with learning difficulties who felt they would not succeed in the standard Food and Hospitality course. Lisa recalled:

> [These students] struggled with group work. So, the benefit of them doing community studies B was they could do things individually. It was really closely tied to what everybody else was doing so it wasn't obvious they still felt they were doing the same as everybody else. (Lisa, SACE, Health)

Similarly, Anna, a senior English teacher who teaches the standard SACE English subject, asserted that by the time students are enrolled in the Year 11 English class, many of the underperforming or "lower-end" students would have enrolled in Essential English in earlier years, which is considered an easier subject than standard English. Therefore, underperforming students may be transferred or encouraged to enrol in apparently easier subjects. As Jane stated earlier, this may be due to the pressure on teachers of having students pass to receive their school certificates. Nevertheless, Anna recognised that she still caters for students with lower abilities:

> I work with mainly able students at the senior-secondary level, because at our site, at Year 11, there is an Essential English program. So, students who have a greater struggle with English as a subject, tend to not come into my classroom. However, I do have students in my Stage 1 class, who might be of lower ability. (Anna, SACE, English)

Likewise, Tina outlined that at the beginning of the year, the main focus for teachers is to understand which students have learning difficulties in their classes and to determine how to best differentiate for such students. Tina stated:

> Within the school at the start of the year we always go through each student who has a diagnosed learning difficulty and the teachers of that student meet to talk about what steps we need to put in place to support them in the classroom. (Tina, SACE, Science)

Correspondingly, Sally acknowledged, "you have to be sure that you are supporting the kids that need it [DI]", sustaining the idea that DI is more necessary for some students than others, as seen in the statements by Sally, Tina, Anna, Lisa, and Elizabeth. Although teacher participants believe that DI needs to be implemented for all students, certain constraints make this more challenging to execute. Such challenges restrict DI to select groups of students, such as those with learning difficulties. In the next section, how DI is represented in policies will be discussed.

4.2.5 The impact of differentiated instruction policies

Policies regarding differentiation, or perceived lack thereof, further supported the idea that differentiation may be seen as special education. Ten of the 12 teachers stated that no policy supported them in the implementation of DI in their classrooms. Instead, being told verbally by their respective leadership teams that DI was a must for all learners in their classroom. If there was a policy, it was stated by teacher participants that DI is part of existing special education policies. For example, Sally, a teacher at Lakes School, stated that to her knowledge, there was no formal policy on differentiation; however, she commented that there was some reference to DI in the special education policies. She stated:

> To my knowledge, there is no formal policy on differentiation. But I do think it's—I know that it is mentioned in the SWAN (Students With Additional Needs) policy. So in our learning support policy and in the EALD policy and currently a gifted and talented policy. It's definitely parked in there. It doesn't exist in a form on its own. But I know it's part of the other areas. (Sally, QCE & AC, English)

Linda and Elizabeth, also teachers at Lakes School, held a similar view in not knowing if a policy existed, with Elizabeth answering, "not that I'm aware of" when asked about whether DI policies existed in her school. Linda, however, referred to the Nationally Consistent Collection of Data (NCCD), the annual census of students who meet the broad category of disability, to conclude that DI is part of the school's framework for catering to students with additional needs. Linda outlined:

> I mean there's NCCD collection, data collection that we have to do, there's that. Of course we've all got—the kids have IEPs and PLPs and we do that. Is there a specific document? I actually couldn't tell you if that even exists. Maybe there is and I just don't know about it. (Linda, QCE & AC, Mathematics)

These responses show that DI, for these teachers, is more suited to groups of students rather than the whole class. Further, the teacher participants expressed that the current DI policies were intended for students with disabilities, and those with ILPs.

Furthermore, participant responses from those at Hills School, reflect that there were differences in whether policies existed at the school. Jennifer was the sole participant in this research who stated that DI was in their general teaching and learning policy and was not bound by special education policies. She asserted:

> We have our teaching and learning policy specifically states that student learning must be differentiated that assessment needs to be, so it's written in our overarching policy…it's fairly clear in the overarching that you're just expected to do it. (Jennifer, SACE, English)

This view by Jennifer was not shared, however, by the two other fellow colleagues, Tina and Amber, at Hills School. Tina stated that she was aware that a

policy in DI was still being written: “I think within the exceptional learning, I think that policy is being written and we’re implementing it at the same time while they’re finalising the policy.” Amber stated that ILPs were a means for formal documentation of DI; however, not all students are on ILPs, which are usually reserved for students with learning difficulties or disabilities. Amber stated:

> Well we’re bringing in a new procedure called the Individual Student Plan which is given to every teacher if we have a student with a learning difficulty. On that document is all the differentiation you have to put in place for that student. So it relates to the learning context, it also relates to teacher led instruction, homework and it’s just all encompassed on the one document. So we have that for individual students, yeah. (Amber, SACE & AC, Humanities)

These results are noteworthy because Jennifer, who stated that DI was written in Hills School’s general teaching and learning policy, was the school’s deputy principal at the time and wrote the policy herself. Jennifer stated in the interview that she believes she had good knowledge and consistent application of DI. Amber and Tina stated, however, that they were unaware of DIs incorporation into the general teaching and learning policy. As deputy principal, Jennifer was more aware of the DI policy being written in the general teaching and learning policy, more than her teaching staff, who related DI with special education rather than as a whole-school approach.

In contrast to Hills School, Highview School teacher participants outlined that they were unaware if policies for DI implementation existed in their site; however, this does not appear to have hindered their ability to differentiate. Thus, a few teacher participants believe that policies regarding DI may not be important in

being able to differentiate well. Jane and Anna assert that teachers who are unaware of policies either do not seek them or let them determine their use of DI:

> I think I am going to have to say if any. That might be because—only because of my ignorance. Because having been here a long time, I don't go much beyond my own organisation of my own classes. (Jane, SACE, Mathematics)
>
> I don't know the answer to that question, even though I do it, and seek it out, I think—I don't have to rely upon a policy, regarding—it's not that I'm just plain ignorant—although that may be true, it's more that that hasn't been something I've had to seek out and rely on. (Anna, SACE, English)

Michael outlined that he did not know of a policy at Highview School that outlined teachers needed to differentiate for students. Further, he outlined that DI was likely recommended and that DI may be encouraged by means other than a policy. He stated, "I don't know if there is [a DI policy], I think it's probably heavily recommended, but I don't know if there's a requirement that you have to meet a certain or anything like that, I've never seen it if there is."

There are clear differences between the teachers' views regarding DI policies from the three different schools—whether DI policies exist, whether DI policies exist within general teaching and learning or special education policies and whether DI policies influence DI implementation in teacher classrooms. While Jennifer was the only teacher and deputy principal to state that DI was written in the general teaching and learning policy, she asserted that she was confident in differentiating. In the next section, how teachers may develop a mindset where they do not take responsibility for DI implementation, is discussed.

4.2.6 The development of a lack of responsibility for differentiated instruction implementation

The results highlight various constraints that impeded teacher participant's abilities to differentiate for all students, which eleven teachers admitted was their responsibility. Furthermore, the results showed that teachers may have a mindset that differentiation is for students with special needs and that DI is not their responsibility. For example, Jane stated that the Essential Mathematics class is often perceived as the "lower-end" class and discussed how special-needs students have been pushed into her class to "get them through" academically. She asserts:

> I teach maths now to the most disgruntled and disillusioned and jaded maths students in the school. My pride every time I teach [Essential Mathematics] is that by the end of the semester or the year, however long they spend with me, they actually don't feel like maths failures anymore. I can successfully convince them that they do have a mathematical brain and that they do have mathematical talents. I think they appreciate even that element perhaps more than the maths that I actually teach them. (Jane, SACE, Mathematics)

This view is also evident concerning English subjects. Anna stated in an earlier sub-theme that students struggling with English tend to move to Essential English early in senior-secondary schooling, rather than the standard English class. This shows that a small percentage of teachers believe that differentiation is not their responsibility due to the distinct academic levels. Jane stated, "I think it's [DI] more pertinent to them [the special needs students]." Jane and Anna's responses show that DI is considered necessary for special-needs students.

The constraints teachers outlined in being able to differentiate effectively, led less than a quarter of teachers to believe they do not have to differentiate as much as

others. For example, teachers of the SACE spoke about special provisions. If students need to have their work adjusted (e.g., shorter assessment tasks and use of a computer in written examinations), they must apply for these with a recommendation from the teacher. Tina outlined her view, stating:

> Sometimes it takes a lot of time and teachers don't have a lot of time. Yeah, just that strict content that you absolutely have to cover, and particularly when you get to SACE. You can apply to the SACE board to differentiate for students. I have had a few this year that we've had to put through and just really reduce the length of tasks… So it's not impossible, but sometimes there are tricky bits and negatives in there. (Tina, SACE, Science)

Therefore, the constraint of having to apply for provisions, paired with other curriculum constraints, means DI is difficult to action for some teachers. In the next section, the second theme—'the impact of learning difficulties on differentiated instruction effectiveness'—will be discussed.

4.3 Theme 2: the impact of learning difficulties on differentiated instruction effectiveness

The second theme constructed from the dataset—'the impact of learning difficulties on differentiated instruction effectiveness'—is named accordingly as the results highlight vast differences in teachers' perceived abilities to implement DI, depending on the type of learning difficulty they are presented with. Namely, the effectiveness of DI implementation was impacted depending on whether learning difficulties were diagnosed or non-diagnosed in students. Furthermore, results reflected outlined that three of the twelve teachers say that DI can often feel uncertain, with one participant stating she believed that DI could often feel "out of

control." Over half of the teacher participants expressed that they could feel unsure about how much to differentiate and when it is appropriate to do so. This uncertainty was intensified when students had non-diagnosed, or undefined learning difficulties, as teachers expressed difficulty in knowing how to accommodate for such broad needs. In contrast, many teacher participants stated that when students come to their classrooms with diagnoses, labels, or identifications, these provide guidance and ways teachers can differentiate with certainty. These sub-themes have been explored below and are presented in order, for the overarching theme to have meaning. In the next section, the belief that DI is a must and how teachers stated that there is no choice but to differentiate, is discussed.

4.3.1 There is no choice but to differentiate

The earlier theme—'appropriately actioning differentiated instruction is challenging'—established that eleven teachers knew that DI was for all students. This section explores this notion by further outlining that, while DI is for all students, nearly all teachers also believe that it is necessary. This view was expressed in the majority of teacher participants' comments. Anna stated that DI was important throughout the interview: "I would just like to say again, every teacher needs to differentiate… everyone needs—deserves and should have access to the curriculum." She believes DI was needed for students to have an equitable curriculum experience. When asked why she chose to differentiate, Lisa replied, "you have to [differentiate] [laughs]. You have to." Her enthusiastic reaction reflected that differentiation is a teaching framework that one must simply utilise. She also stated:

> But you have to [differentiate] because you just would to help students be successful and it helps your classroom run more smoothly. It helps students become more engaged in your lesson. It helps students be successful. Why wouldn't you do it? (Lisa, SACE, Health)

This statement further emphasised that for Lisa, the desire to differentiate is not based solely on student success but on the need for a smoother lesson. Hence, DI is viewed by Lisa as an indispensable strategy that results in student benefits and her feeling a sense success in her classroom. Lisa's statement shows a desire to differentiate for student engagement and success.

Similarly, Michael expressed that DI was essential and that he was driven to differentiate as he stated that if he did not, his learners would become disengaged, much like Lisa asserted. He said, "well if I don't use it [DI], I'm going to lose many of them. I'm just not going to be providing the best learning for them." For Michael, DI provides the best learning outcomes for students and DI helps achieve this goal. This notion directs that Michael may have seen success in using DI in his classrooms. When compared with Lisa's earlier view, she spoke about student success. At the same time, Michael referred to learning outcomes, reflecting that between these teachers, like Lisa and Michael, they have a broader definition of what constitutes students' success, surpassing student grades and achievements.

While nearly all the teacher participants have stated that DI is necessary, teachers like Sally asserted that they recognised a tension between knowing they must differentiate and differentiating. She specified, "I know that I do have to do it. But I don't do it consistently enough", reflecting that there may be various reasons why DI is not implemented consistently for Sally.

Linda concurred with Anna, Lisa, Michael, and Sally's views on the importance of DI. She also asserted that DI was a right for all students, taking a moral stance in believing that all students have the right to achieve in a differentiated classroom. Linda stated:

> So, for me that's why I would do it…they [the students] deserve as much, every kid deserves the right to get the best mark they can and get the best outcome they can. So, I think it's really important to differentiate, because that's what they need to get there. (Linda, QCE & AC, Mathematics)

Linda's belief that DI is a right for all students appears to be based on a desire for her students to achieve in higher grade bands, given that every student has the right to the best grade possible and to advance academically. Therefore, Linda differentiates for academic achievement, and success in senior schooling. Sally too, is also driven to differentiate based on student grades and success in assessment tasks. She explained:

> With senior you want to do that as much as you can. You also need to make sure that they actually have the skills to succeed in the assignment. Whereas in junior, how they score an assignment is not really your focus. You are trying to upskill them, so when they get to senior they can be successful. In senior, you obviously are still upskilling them. (Sally, QCE & AC, English)

The statements from Sally and Linda show that they believe that DI is necessary solely for students to succeed in assessment tasks rather than in other aspects (e.g., formative work, work during the lesson or other aspects of their learning journey). Sally and Linda both teach the QCE, and their responses reflect the pressure they feel in helping students achieve higher grades.

There is a stark contrast in teachers' statements for why they choose to differentiate or not. Amber regarded DI as necessary based on a loose definition of success. She did not discuss what type of success this was in her statement (e.g., academic progress, time management, positive relational success). Her hesitation to limit students by ability also highlights her desire for learning progress and personal development in her students. Amber asserted:

> Because they're [my students] successful and that's what it's all about, isn't it? Is that you want everyone to feel successful and I—as a teacher I never want to limit someone's ability. That's what you have to do is make sure you tap into their own unique learning style. So that they can showcase their ability. That's what makes you happy, right? (Amber, SACE & AC, Humanities)

In summary, the teachers stated that they consider DI vital for all students; however, they also outlined factors that influenced their motivation to implement it consistently, such as the desire for students to achieve good grades. It is unclear whether these teachers want their students to obtain good ATAR results or feel the pressure to get them to a certain point, however, for a few teachers, like Sally and Linda, their motivation for DI lies in helping their students achieve higher grades. In the next section, how DI can feel out of control for some teachers, is discussed further.

4.3.2 Differentiated instruction feels out of control

While majority of the teacher participants outlined that implementing DI was not a choice, and motivations for doing so varied, there was a belief that trying to implement DI, gave teachers a sense that their lesson was out of their control. Not all

teachers stated that they believed that DI was overwhelming; however, for the two teacher participants that did, this impacted their perception of implementing DI. It did not, however, influence their belief in DI, given that all teachers regarded DI as essential for all.

Elizabeth reflected on an unsuccessful element of DI in her senior classroom. She stated that she tried flexible grouping of students with mixed abilities, a common DI practice. While she recognised an element of success for the students, the perception of reduced control was enough for Elizabeth not to pursue this type of DI strategy again. Elizabeth asserted:

> I've just realised it just doesn't work. What ends up happening is the better students end up taking over so those weaker students don't have a voice in their group… As I said, it felt very out of control…so I think that's a level of success because I think that's actually a good thing in terms of learning and having them at different—but it's not good for me. But I think it's good for them. (Elizabeth, QCE & AC, Science)

Elizabeth's statement also draws attention to a belief that some students in her class are academically "better" than others, that she may be categorising her students based on academic achievement and not taking a flexible approach. Elizabeth asserted, however, that mixed-ability grouping did not work and has not used this strategy since, realising that grouping by academic ability may not be an effective method for her class. Other teachers, such as Jane, outlined that DI meant that students needed to work on all different activities all the time, contributing to a sense of mayhem. She stated, "you can't churn [DI] out year after year. You are going to have a bit more mayhem in your class because you've got kids at all

different activities, doing different things." Hence, Jane feels that DI is contextual and may not just be a set of strategies one can use repeatedly.

Elizabeth and Jane identified a lack of control with DI implementation in their classrooms, however, Jennifer stated that she believed DI to be effective in her classroom. She commented that inconsistency in DI implementation caused a reduction in control and confidence:

> The teachers that I'm working with who aren't feeling as confident, for me it's because they're not doing it regularly. … Because I do it every day, because I keep on practising it because it's not something that I'm pulling out once or twice. (Jennifer, SACE, English)

While Jennifer's statement reflects that consistent DI helps develop self-efficacy in DI practice, feelings of success in DI may depend upon the classroom culture and students. Feelings of failure and feeling out of control with DI may depend not only on its success, but also on how students respond to it, as reflected by Elizabeth's earlier statement. Anna and Carol commented on their students' reactions:

> It really depends on the culture of the classroom and the confidence of the students. I think a lot of students who might have some challenges with regards to their literacy skills—so just thinking about my practice in particular—they are often students who've learned to fly under the radar and not be noticed, so that doesn't help them [laughs]. (Anna, SACE, English)

> So, if I'm working with a kid who's stuck and I can help them get unstuck, it's why I'm a teacher. It's just pure joy. But it's hard when you can't. When you just can't get them past it. They're just stuck. It's very distressing…. Because I don't get them until they're at least 13 or 14. But it makes me sad.

> Sometimes I want to go and get a bucket of cold water and tip it over a child and say, come on. Come on. Let's just see what you can do. (Carol, IBDP, Humanities)

Carol raised a similarly important point that DI may be contributing to a sense of failure and reduced control in lessons. The reduced control for the two teacher participants, namely Elizabeth, may arise when students are not used to a differentiated classroom and have not had their needs met consistently. In the next section, the broadness of what constitutes a learning difficulty, and the impact this has on DI implementation, is discussed.

4.3.3 Implementing differentiated instruction for different types of learning difficulties

Participant responses revealed that for less than a quarter of teachers, DI can be overwhelming. Furthermore, teacher participants outlined in their statements that there is uncertainty about how far or how much to differentiate, and for whom specifically. When differentiating for learning difficulties, this uncertainty is exacerbated when teachers lacked an understanding of what constitutes a learning difficulty. Out of the twelve teachers, eleven commented on the belief that learning difficulties were a broad, often undefined concept. Each teacher went into further detail regarding what they believed learning difficulties encapsulated and the complications caused by the vagueness of what constitutes learning difficulties. There was, however, a common agreement among the teachers that learning difficulties are broad and encapsulate many things, as stated by Linda and Lisa, respectively: "So, I mean I think there's a lot of different things that are learning difficulties" and "I guess, yeah, there's such a variety that it's hard to define."

Anna’s definition included students with wellbeing concerns: “I think it’s such a broad thing to say here. When I look at—I have a very strong wellbeing focus and I look at some students who have really complex wellbeing issues outside of the classroom.” Jennifer added that students who experience trauma might also experience learning difficulties. Mary used the term “emotional strength” to describe students who lacked in this area as perhaps having learning difficulties. Anna, Jennifer, and Mary’s comments show that learning difficulties may be viewed as encompassing social and emotional challenges.

In contrast, three teachers stated that the broad term of learning difficulties as solely encompassing students who struggle with their schooling excludes social and emotional concerns. Carol stated:

> There’s the kinds of learning difficulties that are less about understanding, and more about execution. So, just not having the strategies, not knowing—maybe just not having happy experience. Or ever really being shown how to decode the school. Not having strategy for school. That’s broader. (Carol, IBDP, Humanities)

Like Carol’s view of learning difficulties, Michael and Elizabeth also stated that the term “learning difficulties” was related more often about students who struggled with their learning. Michael stated, “it may not be the traditional way but the actual meaning of it, apart from saying that it’s difficulty in retaining information, difficulty in understanding information, difficulty in communicating.” Elizabeth, however, believed learning difficulties included difficulties with certain subject concepts. She used an example of students with learning difficulties in her Science class:

> I think there's some girls that struggle with remembering and finding the scientific right words. So they can get the concepts but can't communicate scientifically what they think. There's some girls that just can get concepts and just think beyond where we're going but then some struggle with actually understanding just the basic sort of concepts I guess that we're putting forward. (Elizabeth, QCE & AC, Science)

Some teachers had competing views on what constituted a learning difficulty. For example, Anna stated "I find that really hard. Is it a disability or a disorder?" Jennifer stated that learning difficulties and learning disabilities were the same.

As evidenced in the teachers' statements, the broad and undefinable nature of learning difficulties negatively affects some of these teachers' abilities to differentiate accordingly. This uncertainty was exacerbated by the absence of clarity regarding what constitutes a learning difficulty.

The results show that for nearly all the teachers in this research they are uncertain of what is included within the definition of a learning difficulty, it becomes challenging to cater to student needs. Teacher participants expressed difficulties in catering for learners considered more on the "higher end" academically and those who may be considered struggling learners. Hence, teachers may be planning for middle-of-the-classroom learners compared to academically able and academically challenged students. Elizabeth's understanding of DI is reflective in her statement that, while certain concepts and content should be omitted for students, she is unsure about what parts to discard and for whom. Elizabeth believes that differentiating for lower-end learners requires the curriculum to be modified away from what is expected of that student in their particular year level. She uses the example below to highlight her point:

> You know, like if you're looking at atomic structure, you've got your protons and neutrons and the nucleus electrons and shells and stuff. Like that's just what you need to know. So—and obviously with some of the good kids I go a little bit further with them and I will explicitly say to the class, this is all you need to know for this level. But just out of interest, this is some extra interesting information or whatever. So I do try and cap it and say this is—you know, if you're freaking out, stop freaking out, it's okay. This is what you need to know. But with those concepts, what do you cut out? I don't know. Because you know it or you don't sort of thing. (Elizabeth, QCE & AC, Science)

Elizabeth's comment reveal that students who are "good" are more academically capable than others and that she may place more emphasis on differentiating for those that are academically capable. Elizabeth's comment also emphasises that she prioritises academically capable students more. Elizabeth recalled a time, however, when she differentiated for a student with poor working memory. She expressed that she was unsure as to whether this was constituted as a learning difficulty but addressed the difficulty of catering to the needs of this student, particularly when a strategy that she thought would work did not. She described her strategy:

> Even with this [scaffold], describe what happened, like draw on the diagram and stuff. You know, rather than writing sentences, annotate the diagram. She still couldn't do it. She'd actually done the experiment. So I'm thinking well that scaffolding didn't work. So what do I need to do next time? (Elizabeth, QCE & AC, Science)

Elizabeth's statement shows how unsure she is, when catering for the needs of students with learning difficulties in her classroom, when such needs are not clearly defined. Like Elizabeth, Michael's uncertainty in how far to differentiate was caused by not knowing his students well enough. He asserted:

> If we really know the student very well we can actually recommend something that could actually be beneficial for them. Not tell them to do it but say, you could do like this. I don't know if that's differentiation but it's certainly freedom. (Michael, SACE & AC, Humanities)

Michael points out that knowing students as learners is important to differentiate accordingly. Moreover, knowing students does not have to mean only understanding what learning difficulties are.

Linda declared that uncertainty in differentiation was further heightened through the difference between senior and middle schooling. She stated, "I'm finding it much harder in the senior school to do it [differentiate] than in middle school where there is flexibility, but I think it's just as important there but it's a real gap, I think." Therefore, the broadness of what forms a learning difficulty and the constraints that may arise from each curriculum framework may make it even more challenging to cater to student needs. Particularly those with learning difficulties. In the next section, how labels and diagnoses of learning difficulties provide guidance in differentiating, will be discussed.

4.3.4 Clearly identified and defined learning difficulties provides guidance in implementing differentiated instruction accordingly

There is a stark contrast between vaguely defining and diagnosing/labelling learning difficulties. When learning difficulties are clearly defined, these teachers' responses show that they find it easier to implement DI and cater to students' needs.

Mary commented that a diagnosis of a type of learning difficulty, in this case, dyslexia, meant that she had a preconceived notion of the abilities and demeanours of her students with dyslexia, stating "they're some of the less compliant students I've taught. They're the ones who became your ratbags and disinclined students, as we used to call them back then." Thus, students with dyslexia may form a sub-group in Mary's classroom: "They've got learning difficulties which have been medically sanctified and therefore they sit sort of in one sub-group."

Anna also spoke of learning difficulties as being diagnosed or identified for students. She stated she had a student with "auditory processing [concerns]… [who] also experienced dyscalculia and there were some more things that perhaps hadn't been quite well underlined." Correspondingly, Amber observed that learning difficulties could include general challenges as well as medically diagnosed conditions:

> So learning difficulties I think are a broad range of challenges that people face when they are learning. So it could be, for instance, dyslexia but it could also go up to—I've taught people who are blind before. (Amber, SACE & AC, Humanities)

Jennifer asserted that learning difficulties included diagnosing learning disabilities but also imputing certain diagnoses. For example, if the teacher believed they had enough evidence to say that a student had dyslexia, they could attribute that learning difficulty on a student without the medical diagnosis. She said, "so, [learning difficulties] is a broad term that includes diagnosed learning disabilities but

also these other things, the imputed type things that we see that do stop learning happening."

The sub-themes outlined earlier have specified that over half of the teacher participants believe that learning difficulties can be broad and undefinable, which, in turn, can make differentiating appropriately challenging. Fortunately, the teacher participants' responses also show that having a label or diagnosis for a learning difficulty can guide teachers in differentiating appropriately and effectively. Anna outlined the success of using scaffolding as a DI strategy to assist a student labelled with a learning difficulty:

> She's a bright girl, and she's interested in big ideas, but she found it very difficult to access the curriculum. So, it was about me having a very strong plan. At that time, I was really fortunate to have a small class. I only had 12 students in that class, and in getting her to come to class, I was able to take a very scaffolded approach and take one thing at a time, and she was able to express some really complex ideas. (Anna, SACE, English)

Linda shared a similar example, noting that the diagnosis of Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD) allowed her to identify ways to assist these students with their executive functioning. She stated, "I know with ASD and ADHD that that's quite clearly executive functioning aspects of that and the interpretation and inference concerns that also come from that are pretty obvious a lot of the time." While the diagnosis provided Linda with some guidance on how to cater for this student's needs, it may be leading her to believe that all students with ASD and ADHD have executive functioning concerns, which places difficulties on students without these issues.

Like Linda, Mary experienced a similar situation working for a student with a diagnosed learning difficulty. She stated:

> I get the [learning difficulties students] of the class, and I use examples which I know [they] are then going to use…so that makes [them] feel comfortable. So for example, in the first task, [a student with learning difficulties] chose to focus on whether sugar should be taxed. That's the example I had used numerous times in class, which was fine, because that's a comfort zone for her …So I often find that those students, who you label, they're the ones who need experiential learning, and that's why I've been so fortunate with my subjects where I've been able to draw on so many real examples to make it alive, and that suits the experiential learner. (Mary, SACE & AC, Humanities)

While Mary stated that she felt she was better supporting the students with diagnosed learning difficulties as she knew that modelling assisted these students, she potentially risked limiting these students' abilities and taking a deficit approach to their learning. Although the label appears to have provided Mary with guidance (e.g., knowing the student may likely be an experiential learner), having a label may make it difficult for students who are categorised based on preconceived notions. Nevertheless, using labels/diagnoses appears to have helped these teachers to build their capacity in differentiating, as, like Mary, they can use their pre-existing knowledge of what difficulties and challenges students can have as part of their diagnosed learning difficulties. In the next section, the third theme—'the impact of partially upholding the differentiated instruction framework'—will be discussed.

4.4 Theme 3: the impact of partially upholding the differentiated instruction framework

In the previous themes, the teachers expressed that DI was necessary for all students, and there was no choice but to differentiate for their learners. This is significant because this concept forms the basis of the third theme—'the impact of partially upholding the differentiated instruction framework'. This theme has been named accordingly as it encapsulates the results pertaining to the impact of partially upholding the DI framework. By that, the researcher highlighted earlier that teachers believe DI is for all students, but due to a variety of constraints, they provide differentiated instruction almost exclusively to students with special needs. This theme builds on this notion further, outlining the effect that familiarisation in DI strategies can have on students and other teachers, whilst also outlining the effect that fear and reluctance to engage with DI can have too.

This theme discusses the idea that some of these teachers may place DI's importance under a cost-benefit analysis, that is, they questioned whether the benefits of implementing DI outweigh its perceived negatives. Therefore, these teachers may be utilising DI to a certain extent, given that they identified many constraints (e.g., personal capacity and curriculum framework restrictions). Constraints have been revisited in this theme, as they construct a picture to the reader, as to why teachers may be weighing up the positives and negatives with DI, before implementing DI. Similarly, the benefit of attempting to implement DI is explored, and the benefits that can ensue upon other teachers, when one is skilful in differentiated instruction practices. Last, the negative impacts on DI implementation when teachers are fearful and reluctant to use DI, are explored. Sub-themes have been presented in order, for the reader to understand how the overarching theme was

constructed. The first sub-section discusses the challenges teacher participant face when trying to implement DI for all learners.

4.4.1 Challenges in implementing differentiated instruction for all leaners

Some of the constraints in implementing DI, such as curriculum constraints, have been established in the first theme; however, it is important to note that constraints were vast and differed extensively among the teachers. Particularly, teachers perceived that certain types of differentiation were more challenging than others, depending on their subjects.

Tina asserted that a challenge in differentiation was assessment. Certain assessment types, such as tests, were non-negotiable within the QCE and did not allow her to differentiate significantly for product and assessment. She conceded that, due to tests and exams that assess all subject content, there was a pressure to teach all course content and to “get through the content” delivery rather than focus on other high-impact teaching strategies. She stated, however, that she had to differentiate to help students understand the content as best as possible. Tina explained:

> I think one of the biggest difficulties is in science it’s very, very content driven and students being able to connect with that content, Year 10 science particularly because it’s a compulsory subject, trying to get them to connect and engage with topic about the universe and black holes can be really, really difficult. So differentiation is really important in that and finding them different things that they’re interested in so that they can actually access the content…with our practical work and our assignments we can be a little bit

> more flexible, but with tests and exams you've just got to teach the content. (Tina, SACE, Science)

Linda, too, expressed that there is reduced flexibility in differentiating assessment, outlining that she believes the QCE mathematics courses have set assessment tasks, such as examinations, that cannot be differentiated. Further, she spoke about the pressure of having to deliver content, much like Tina. Linda stated:

> I'll deliver content and we have; I use discussion a lot in my classroom because I think for maths particularly it's incredibly important for development of understanding…there is no flexibility in terms of what they have to do for their assessment, and even for what topics we cover, there's no flexibility whatsoever. (Linda, QCE & AC, Mathematics)

For Tina and Linda, the lack of flexibility to differentiate assessments coupled with the weight of having to teach all content to students may be spurring these teachers to differentiate in other ways beyond assessment, however, it may be causing them to differentiate less, as to get through the content with their students.

Elizabeth and Jane held a perception that DI is subject specific—meaning that DI practices differ across subjects and that what DI occurs in one subject may not occur in another. Elizabeth outlined:

> I think sometimes science as well, I don't quite know how to differentiate tasks. Whereas in maths, I think you can have like—you do this skill, then you build on it, then you build on it, then you build on it. Whereas in science, I'm not quite sure where you stop. (Elizabeth, QCE & AC, Science)

Elizabeth's statement specifies that DI may be perceived by her as more constrained in assessment tasks for Science when compared to assessment in Mathematics. Similarly, Jane also believes that DI is quite subject specific, outlining

that instruction is quite explicit in mathematics. Still, one can utilise flexible grouping to differentiate processes or content. Jane asserts:

> I have selected those techniques that do work for a maths class. They'd be completely different for other subjects. But in the maths class it's often broken up with instruction, practice, instruction, practice. You can give multiple sheets out. You can put them in groups where they teach each other. You can do all sorts of things like that. (Jane, SACE, Mathematics)

The comments from both Elizabeth and Jane detail that DI practices may be viewed as being subject-specific by these teachers, with each subject more geared towards specific DI practices than others. In contrast, Sally recognised constraints in being able to differentiate assessments. She outlined that the QCE has various assessment types that students need to undertake, for example, an examination. She stated that in many instances, these are not negotiable and cannot be substituted for other assessment types. Due to this, Sally outlined that this difficulty leads her to avoid changing assessment tasks altogether and focus more on the differentiation process. She stated:

> It's not changing the end product. But the assistance to get the process of that product. So with that, I think that's probably what I've noticed to be the most direct with the beneficial, where I can see. So scaffolding for EALD students, it's very language focussed or sentence starters that give them the grammar and the language. You are not giving them the ideas. (Sally, QCE & AC, English)

Sally's comments reveal that she surpasses constraints by using DI to an extent. Two teachers, Jane and Elizabeth, expressed the belief that DI is subject specific and that one's repertoire for DI differs in each subject. Sally further outlined

that, in her school, DI was not valued because the school was a more "academic" school, and DI was targeted towards students with special needs, meaning she found it difficult to upskill in DI. She reported:

> I think [DI] hasn't been [a focus] in the past. Given the nature of our students and our academic focus, I don't think it has been. But it's been recognised and it's now one of our school targets for the next couple of years. (Sally, QCE & AC, English)

Sally expressed a desire to upskill and learn more about DI but voiced that she could not do so, given that the stated that the school did not value DI.

This sub-theme has highlighted varied constraints that may hinder these teachers' ability to effectively differentiate. These barriers included curriculum framework constraints—such as a perceived reduction in flexibility in differentiating assessment—pressure to deliver content, the idea that DI strategies do not apply to all subjects and the unsupported need to upskill in DI. In the next section, how teachers may be partially utilising DI, will be discussed.

4.4.2 Partially utilising differentiated instruction in one's classroom

The analysis of interview data uncovered that for all teacher participants, they aim to differentiate as much as they can, within the constraints they face. This leads them to differentiate to a certain extent and within their parameters. Their statements show that, while constraints are present, these teachers are neither dismissing DI nor utilising it, reflecting a desire to want to cater to student heterogeneity. For example, Amber talked about her Year 12 Business Innovation course, reflecting that, while her students had to complete an external assessment,

there was still some flexibility in its completion. She outlined her use of DI within such parameters:

> Whenever I guess I see students struggling, I always just on the spot kind of pivot and change what we need to do in lesson to meet their needs. Also in assignment tasks I think I'm really flexible as a teacher. I'm not ever like you have to do it this one way. (Amber, SACE & AC, Humanities)

This response shows that Amber appears to be differentiating based on students' weaknesses rather than other indicators. Similarly, her desire for her students' success compelled her to differentiate in deemed difficult assessments. Tina held a similar view, explaining that tests were necessary for her Science subjects as the SACE requires timed tasks for many Science subjects. She recognised, however, that while these assessments were compulsory, there was some room to differentiate in tests. She explained:

> the differentiation in the tests would come from the different styles of questions that we use and the different levels of questions. Some questions would just be completely spouting knowledge that you've got, whereas others are applying your knowledge to new situations and things like that. So there's a little bit, but it's definitely much harder to differentiate that content. (Tina, SACE, Science)

Tina believed she was differentiating as much as possible within her perceived constraints. Like Amber, there were certain subject requirements, but it appeared that subject requirements, while frustrating, still empowered these teachers to differentiate. Along with other teachers, they expressed frustration towards the constraints, highlighting their desire for more flexibility in their curriculum framework and to differentiate more and wider areas.

In speaking about her curriculum framework, Lisa stated that her students had to complete an external investigation for the subject Food and Hospitality, which she perceived as having not much room to differentiate. Lisa reflected on the other ways she could differentiate, which involved the differentiation of resources, given that her subject is more practicum-based. She described her use of differentiating resources, which aligned with the flexibilities of her subject while trying to get students to reach the same lesson goals. She stated:

> Okay, so often for me, it's incorporating it into a practical setting. So, let's say the goal might be to do a pasta dish. So, if I had someone—so it could be that students might—I might have someone in the class who's making their own pasta and then I might have someone in the class who's using a dried pasta. But still, at the end, they're all going to have a pasta dish but the way that they get there is going to, I guess reflect where they are at the moment so that everyone can be successful. So there's an appropriate degree of challenge. (Lisa, SACE, Health)

Like Lisa's experience, Anna and Mary outlined that differentiating the classroom environment was more within their ability to differentiate. Anna recalled a time when she differentiated her learning environment for an individual student: "the only thing I did as a classroom practice for that student was I made it a much more quiet classroom because I had information knowing that a lot of noise was going to cause her distress." Mary postulated that she took a whole-class approach to differentiate her learning environment, recognising that the environment helps students to feel safe and supported. She reaffirmed her differentiation through the environment, stating, "But it's also important that I've got a dynamics that the class feels cohesive."

Regardless of the various constraints in implementing DI effectively, Michael stated that DI was inconsistent for him “because there are lessons where I probably fail to differentiate or don’t do it enough and I do try every lesson to do it to some extent but I could do it more.” Jane also believed that DI did not need to be a constant success every lesson and was not required daily, recognising that other strategies beyond the DI framework may be more important for their classroom learners.

These statements show that while these teachers expressed constraints in implementing DI, they believed they can still differentiate to an extent and within the perceived flexibilities. These constraints may be either within their curriculum framework or subject level. These teachers’ responses demonstrate that while constraints are present, they are not abandoning DI altogether and still desire to embed DI in their classrooms wherever possible. In the next section, the confidence one can develop from implementing familiar and known DI strategies, seen as a benefit, will be discussed.

4.4.3 Implementing familiar differentiated instruction strategies

The findings of the reflexive thematic analysis detail that eleven of the twelve teachers are confident in DI strategies that were known to them and practised regularly. Further, the results highlight that for less than half of these teachers, they are more confident in actioning DI, when they work within their comfort zone. In contrast, the teacher participants indicated that moving beyond one’s comfort zone may lead to a reduced confidence in DI. Linda described when she began using formative assessment as a DI strategy. She initially found it challenging but has since developed her confidence. Linda stated:

> I think what I'm doing now is adding to [my DI repertoire], I guess. So, something that's added this year with the formative quizzing, I would mark it and I would return it and I would keep records and all of that. But what I've added this year is a self-reflection feedback sheet to the girls. So, not only do I still mark it and return it, but then they have a sheet that's broken down that they are reflecting on their outcomes and what they can do from here. So, I'm definitely confident, but I think it can always be improved, and it's certainly something I'm trying to do is improve it more and more each time. (Linda, QCE & AC, Mathematics)

Likewise, Jane expressed confidence in differentiating her assessment tasks by allowing students to explore different avenues. She emphasised that this was challenging when she started to do this; however, like Linda, Jane stated she grew confident in this strategy. She explained:

> But having different pathways for the students to be able to make their way to a product of their choice. They had pretty much open pathway to get there as well. That really freaked me out. Because I didn't think I'd be able to facilitate their learning in so many different ways in one classroom. That was right at the beginning. I think really from that I learned I had to pull back in. To make is manageable for me so that I could deliver it well. (Jane, SACE, Mathematics)

Further, Sally discussed using scaffolds in her classrooms and her confidence in this DI strategy. She expressed concern for new teachers, stating that they may initially find strategies like scaffolding difficult compared to a more experienced teacher. Sally expressed her confidence in scaffolding, concluding:

> I think—I know—I understand the tasks. How to mark exactly what's been looked for. I think—I write the models. So I think having the confidence that I know exactly what it is they need to put in their work. I think it would be hard for a beginning teacher, who is not going to have the same confidence in what is expected or what that looks like yet, to be able to scaffold in that way… I think I know that I'm not—I don't do [DI] quite as well as I need to do it. So I think when it does need you to make the effort to consider it and it goes well, I think you feel good about it. You can sense that they are achieving and feeling more confident. (Sally, QCE & AC, English)

Sally's response reflects that she is confident in certain DI strategies, such as scaffolding. Responses from Linda, Jane and Sally reveal that when DI strategies are known, there is a level of confidence in implementing them. Furthermore, when asked about what DI strategies the teachers' used and how confident they are in those strategies, eleven of the twelve teachers discussed scaffolding student work and expressed confidence in this strategy. This shows that for nearly all of these teacher participants, they may be relying upon scaffolds as part of their differentiated teaching practice. In the next section, discussion will focus on the benefits that teachers can receive from one another, when one is confident and skilful in implementing DI in one's classroom.

4.4.4 Being skilful in differentiated instruction benefits other teachers

While over half of the teachers stated that they wanted to upskill in DI further and go beyond their comfort zone in known strategies, they also admitted that the constraints hindered their ability to do so and thus wanted to expand their knowledge and skills. Those who upskilled in DI revealed its benefits for themselves,

particularly when moving beyond what they felt comfortable doing with DI and learning new DI strategies. Jane recalled a time when her colleague invited the teachers to watch his differentiated lesson, highlighting the use of a learning menu and its advantages. Jane emphasised:

> I was experimenting with some kids. Having watched my colleague in his class, in that he had a terrific way that kids could make their way through learning. But they didn't all have to learn everything to produce their product. I tried something like that. I have really enjoyed efforts at learning that skill and learning different techniques and being very much more impressed with my colleagues than I would have been otherwise. (Jane, SACE, Mathematics)

Tina explained the sharing of DI practices with her colleagues and how she aimed to share with colleagues in her faculty. She stated, "just to share what we've been doing and just to share ideas because that's another amazing way of just seeing what other people are doing and being able to implement it quickly in your classroom." Michael specified that he benefited from learning about DI through his colleagues. He acknowledged, "I'd probably like to do more of it in terms of actual PD, but most of [DI] I've learnt on the job and from other colleagues." His status as an early career teacher highlights the importance for Michael to have collegial relationships for learning about DI.

Carol advocated that she and her faculty at Highview School, discussed DI every time they met as a group, sharing DI practices and discussing what worked and did not. She stated that having teachers share their success stories inspired others to implement DI further. Most importantly, she recognised that having an expert in DI could improve her faculty's knowledge and application of DI. Carol explained:

> You know? It's almost something that—it's sort of a conversation we have—because I meet with my teams every week. [DI] comes up in every single meeting. So, it's not as though we're not thinking about it. It just would be quite good if we had a little differentiation fairy that could fly in and give us a hand. [Laughs]. Every week. Like, this is what you do here. (Carol, IBDP, Humanities)

While Carol stated that a DI expert could add value to her faculty, Jennifer spoke in detail about the success she had with her students in using scaffolding as a DI strategy. She commented:

> So, I had good scaffolds of each step and I made a—the final task they had to do was then talking about them on a screen cast. So, I made my own screen cast on a topic that they loved and thought it was hilarious, me comparing the different language of kids out in the yard and so on, the footy field and at a netball match. So, they thought it was just funny, but also, they got every point that they needed. So, they were so successful at the end because of the level of different things they could do and access and the support. I just made it look good so that it was visually appealing and so they got the [unclear] that they needed, and it felt fantastic. It felt great when other teachers then saw it and went oh, I love what you did with this, and were also then spurred on by it. (Jennifer, SACE, English)

Jennifer's statement shows that using a scaffold was successful with her students and that teachers at her school were inspired to use scaffolds after witnessing its success. In the next section, why teachers may have a sense of fear and reluctance in enacting DI, will be discussed.

4.4.5 Fear and reluctance with differentiated instruction

Three teacher participants expressed fear or reluctance to implement DI in their senior-secondary classrooms. While not all teacher participants expressed reluctance, those who did expressed a need for confidence in DI. While it was established in previous themes that labels/diagnoses for students with learning difficulties may guide these teachers in differentiating, there was also a fear of labelling. Elizabeth asserted that if she were to label students, she would be limiting her students and capping their ability. Elizabeth stated:

> The other thing with differentiation is I don't want to be putting the ceiling on kids. I don't want to be saying this is what you're to do. Then over here, you kids, this is what you're to do. I don't want to be the one. I want them to be able to have a go. (Elizabeth, ACE & AC, Science)

This response shows that Elizabeth's understanding of DI may be based on having students complete work at different age levels and with different goals. Similarly, Jane asserted that she is reluctant to differentiate because she does not wish to categorise students. She outlined that, while she differentiated, she strove not to "get bogged down in the titles":

> But when I was going through school, I moved to my country town to a boarding school and was very unhappy. Was in my unhappiness and my homesickness, I was allocated to the remedial maths class. I knew my outrage at getting that label at that time. I think that helped me as a maths teacher and now is really coming into play with this integrated learning class. Because you know the power of how the person in front of the room is treating you…when a label was put on me it was very wrong. I was homesick. They thought I was not talented in maths. I went on and got a

> maths degree. I know that labels can be very wrong. (Jane, SACE, Mathematics)

Drawing on personal experiences as a labelled student, Jane's response highlights that she morally does not feel it just to have labels for students.

In contrast, Elizabeth was reluctant to differentiate because she did not want her students to feel different from one another. She recalled when she had a student complete a task different from that of the rest of the class and still achieve the lesson objectives. She expressed:

> Then the other thing with this is when I do go through the answers, she's looking at me saying mine's different. Mine's different. You know? So she's very aware that hers isn't the same as what's up on the screen there. (Elizabeth, QCE & AC, Science)

Elizabeth's comment suggests an association of DI with the completion of different tasks. In contrast, Amber outlined that, from her work with teachers in SACE subjects, the fear of differentiation arises from a fear that they may be breaching SACE rules and feeling overwhelmed with DI when it is initially implemented. She commented:

> Sometimes I think teachers get scared of the SACE or something and they want everyone to do an essay or a written work. Because that's what they feel comfortable doing…At first [DI] can be really overwhelming but then obviously you care for the students and you want to do it for them. So you kind of put the measures in place, you put the differentiation in place in the end. But I think at the start some teachers are reluctant because they do feel overwhelmed…I think some staff members are really willing to take it on. But I think there are still some people that are really reluctant. I think that

might come from a place of still uncertainty. (Amber, SACE & AC, Humanities)

Jane further concurs with Amber's view that a reluctance to implement DI may stem from a feeling that it may not work. Jane stated, "I think the risk is you feel they might not work. They [the student] might not be able to say that they've made progress in your subject area." This reflects that for Jane, reluctance for implementing DI may arise from a fear that it may not work. In the next section, the fourth theme—'relationships and knowledge of students—will be discussed.

4.5 Theme 4: relationships and knowledge of students

The fourth theme—'relationships and knowledge of students'—outlines the importance that three teacher participants placed on having trusting relationships between teachers and students and knowing students well, to differentiate effectively. This theme has been named accordingly as it encapsulates results pertaining to the impact of having strong relationships with students, whilst also understanding their strengths and weaknesses. This theme explores how DI may be more reactive in some classrooms, than proactive. This reactivity is likely a result of having a lower understanding of students' needs. This theme examines, however, the positives of trusting relationships and knowing students, such as confident students, including student voices in differentiated classrooms, and student success. This theme presents sub-themes in order, for the reader to accurately understand how the overarching theme was constructed.

4.5.1 Reactive differentiated instruction

A third of the teacher participants expressed their hesitation and anxiety about implementing DI. Comparably, four teacher participants stated that they might be differentiating more through a reactive model rather than a proactive means, as the DI framework suggests. The results show, however, that reactive DI may prove beneficial, as these teachers are responding to their students' needs as they develop stronger relationships with them. Although Michael stated that he proactively plans for DI and uses feedback in the form of polls and paper surveys, he recognised that DI might sometimes involve being reactive and planning spontaneously. He commented that his reactive planning worked but was sometimes challenging:

> I am confident [in DI] but I need time to understand who they [my learners] are first, especially if it's a new cohort, I need a bit of time to understand what they need. So I do collect feedback, I ask—I've done anonymous polls—write on a piece of paper anonymously, what could be better? So I guess coming up with it on the fly can be a challenge for me because I have to think of something in the moment, but usually I do. Usually it does work out fairly well. You need to innovate, you need to respond, you need to react to the situation. (Michael, SACE & AC, Humanities)

Carol, Michael's colleague, explained that she too believed her differentiation to be reactive but also stated that she believed her faculty was reactive too. Carol, however, specified that Year 12 involved less preparation than other year levels because their classes are more structured, and Year 12 teachers plan more than others. Carol revealed:

> I think we're probably a bit reactive [to DI]. I think we're a bit reactive to differentiation, and maybe not as proactive as we could be. I say that though, but I don't really mean Year 12, because those are pretty beautiful courses. A

> lot goes into them. I would be going more to Year 10. (Carol, IBDP, Humanities)

Although Carol stated that DI might be more planned than reactive for Year 12 teachers, Amber, who teaches Year 12 Business Innovation, commented that she planned for DI but recognised the importance of sometimes being reactive. She asserted, "whenever I guess I see students struggling, I always adjust on the spot kind of" highlighting the reactive nature of Amber's classroom differentiation. Amber's view was reflected in Jane's observation of her Year 11 Essential Mathematics class. She planned topics for DI, but her daily lessons usually involved reactive DI because she stated that teachers must be adaptable. She reported:

> I don't do a lesson plan. I do a topic plan. I do it from the beginning to end in one hit. I know what it's going to look like for the next four to five weeks. I don't do it and I don't do day to day lesson plans because the very nature of differentiated instruction means you are going to make it up on the fly sometimes. You've got to be adaptable with timelines. (Jane, SACE, Mathematics)

Michael, Jane, Carol, and Amber stated that they engage in reactive DI, whether this is regular or occasional. Sally acknowledged that her DI was reactive but realised that it would be more effective if she had time to prepare for DI. She outlined:

> The preparation, the time and doing other roles and things going on, it's hard to get the time to go back and consider that. A lot of it I will adapt at the time and on the spot. Like for what I need. But it would be more effective had I preprepared how I was going to differentiate that stuff. I lot of I can do intuitively and can manage. But if I was going to be more efficient and make

> it a focus, it needs for me to spend the time to go back and reconfigure what it looks like. (Sally, QCE & AC, English)

Sally asserted that planning time may assist teachers in preparing for DI more effectively; however, the other teacher participants' statements reflect that reactive DI is not a negative practice because it allows for quick responses to learner needs. In the next section, how confident teachers in DI practice may lead to increased student confidence, student voice, and student agency in DI, will be discussed.

4.5.2 Confidence in differentiated instruction deepens student agency in the classroom

Four teacher participants stated that DI was more reactive than proactive. There is a positive aspect to reactive DI, as the teachers stated that they could cater to student needs more intuitively. When student needs were met in a differentiated classroom, participant teachers noted positive aspects in their students, particularly their confidence levels and ability to incorporate student voice into their differentiated lessons. For example, Sally stated that when she differentiates and has a good relationship with her students, she "can sense that they are achieving and feeling more confident." Reflecting Sally's view, Mary further stated that she tries to work closely with her students and develop a relationship built on mutual trust. She spoke of a discussion she had with some of her students who were struggling with a particular concept:

> I often have to say to those students, look you're not going to get it until the end of the year, because you need every piece of the jigsaw puzzle for it to make sense for you. But I'm asking you to just work with me so that you can get the little pieces along the way. (Mary, SACE & AC, Humanities)

The trust that Mary develops with her students is important to her in being able to help her students' progress in their learning. Likewise, Jennifer noted that the trust she developed with her students allowed her to utilise student voice in planning for differentiation. She asserted:

> The other thing I'd say for senior students is don't overlook student voice, in that if you have created systems where students have agency and that that is safe for them to speak up, then they will be able to tell you the best differentiation for them. Then you've got a really successful system happening if they can say this is going to work for me a lot better if I can do it in this way, or if you could explain it to me in this way, then that's brilliant. (Jennifer, SACE, English)

Jennifer's response highlights how student voice can be used in her differentiated classroom, giving them agency in their learning. Similarly, Carol believes that trust is crucial for effective differentiation and for students to progress in their learning, stating, "for the kid that needs special support, it's so much about trusting the teacher. Because they've been burnt so many times before by their teachers. Just being left behind. Just ignored, or criticised."

In contrast to Carol's view that trust helps students to progress in their learning, Jane stated that she believed that a trusting relationship made students in her class feel happy and that they could develop self-efficacy in their ability to understand a certain concept. She uses the example of students developing a greater sense of mathematical ability in her mathematics class:

> They were happy…that's what we're all about, after all. This is that class who do have a very low opinion of their own ability. So here they were, as well as mastering the work, they were actually being able to teach someone

> else. There was another reinforcement of their mathematical ability as well, which is very pleasant for these kids to do. To get that self-worth out of it, feelings of self-worth out of it. (Jane, SACE, Mathematics)

The results for this sub-theme reflect that for a small percentage of teacher participants, trusting relationships and knowing their students well, assisted them in helping their students develop a sense of self-worth, show progression in their work, and become agents in planning for effective differentiation with the teacher. In the next section, student success in DI and what this means for the teacher participants, will be discussed.

4.5.3 Students see success in a differentiated classroom built on trust

The previous sub-theme mentioned some elements of student success through solid, trusting teacher–student relationships. This sub-theme explores this further by examining various successes arising from such interactions. Teacher participants perceived success differently. In some instances, the teachers stated attendance as a form of success, while others noted engagement, lesson involvement, grades, and other observational factors as success.

Anna and Elizabeth stated that attendance was the biggest indicator of success in their differentiated classroom. They outlined that when they took the time to develop strong connections with their students, they were able to differentiate to their needs. Anna asserted that knowing her students made her more aware of those that may be more sensitive to feeling exposed in a differentiated classroom. She addressed this by emphasising classroom attendance. She described:

> Attendance is a really big start [laughs]. I do a lot of formative work, and I quite like a lot of formative group work, particularly if I know a student

> might be feeling exposed or vulnerable around their need for a differentiated practice, whatever the source of that requirement is. It takes the pressure off. (Anna, SACE, English)

This view was shared by Elizabeth, who further stated that attendance was not the sole benefit of a trusting relationship; knowing her learners meant she could differentiate to their interests and encourage active engagement. Elizabeth affirmed:

> [the students] turn up and they are actively involved in activities and discussions…I think sometimes we had a few oh moments where they really externally expressed that oh, I just got that. Okay, I get that now. That's pretty cool. I just—I guess meeting the learning needs, I actually want them to enjoy being in the classroom and I think generally most of them do. (Elizabeth, QCE & AC, Science)

Michael pointed out that, much like Elizabeth and Anna, the benefits of knowing his students meant he could differentiate accordingly and have his students see success. His idea of success was his students' enthusiasm and involvement in the lesson. Further, his idea of student success was seeing a transformation from disengaged learners to happy and engaged students. He stated:

> So you have a bunch [of students] who just don't—they have to do the subject, they're not interested in it. But when you get an activity that creates the scenario where they're vocal, they're involved, they're excited, they're laughing, they're smiling, they're happy, they're excited, I think that is how I measure success to some extent. (Michael, SACE & AC, Humanities)

Student participation was an indicator of success for Tina, who also recognised that grades were equally important. Tina commented on how strong relationships with her students enhanced a differentiated classroom:

> Students are engaged. They're interested in your class. They're participating in what you're bringing forward for them. They're asking questions and wanting to know more. How else would I know that they're—I'm meeting their needs? Grades, partially, but their own—yeah. I guess when we're talking senior it has to be a bit about grades too. Yeah. (Tina, SACE, Science)

A significant finding was that many teachers stated that factors that could be observed, such as students being engaged in their learning, were greater indicators of success in a differentiated classroom than grades. While some teachers prioritised data scores and grades, this was not as important as the observational factors, which Sally, Michael, Mary, Linda, Anna, and Amber regarded as indicators of success. In the next section, a summary of key points from the four themes, is discussed.

4.6 Summary

For the teacher participants interviewed in this research, many factors influence their attitudes and self-efficacy towards DI in meeting the needs of their students with learning difficulties. This research has highlighted that teachers' experience difficulties in implementing DI due to a variety of constraints.

When teacher participants were familiar with DI strategies, they were able to overcome and implement DI regardless of such constraints. When teachers had a higher sense of self-efficacy in DI, they were able to share their DI practices with their colleagues.

Furthermore, less than a quarter of teacher participants, namely those who teach subjects perceived by teachers as less academic, believe that they consistently receive students with learning difficulties in their classrooms. Teachers expressed

they felt the pressure to accommodate to the learning needs of students with learning difficulties, compared with the teachers of highly academic subjects who may be less likely to attract students with learning difficulties.

Similarly, the analysis of the interview data uncovered that, when learning difficulties are defined or diagnosed, teachers stated that they were able to select appropriate DI strategies that work for those students. In contrast, however, the broad and undefinable nature of learning difficulties, which teacher participants expressed, led teachers to feel uncertain in their DI practices when catering for learning difficulties that were not diagnosed. Teachers too expressed that this uncertainty meant they could not differentiate accordingly.

Last, the results reflect the importance of having trusted and positive relationships with students. Similarly, results highlight the importance of including students in the DI planning process.

This chapter has presented the results from the collective case study, through reflexive thematic analysis (Braun & Clarke, 2021). Four key themes have been presented that outline various factors that may influence teachers' self-efficacy and attitudes towards DI. Teacher statements were used to demonstrate how the teachers interviewed, approach DI in their senior-secondary classrooms. Chapter 5 focuses on what these factors are specifically and how these factors influence the provision of DI in senior-secondary schooling and what this means for the needs of students with learning difficulties.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter discusses the results from the collective case study, employing semi-structured interviews and evidence artefacts as data collection methods. Data were analysed according to a reflexive thematic analysis (Braun & Clarke, 2021) as a way of interpreting the data, along with explanation of existing research literature.

The final themes created from the research data are: 1) the actioning of differentiated instruction for all students, 2) the impact of learning difficulties on differentiated instruction effectiveness, 3) the impact of partially upholding the differentiated instruction framework, and 4) relationships and knowledge of students. The following section introduces the five key findings that were constructed based on the results presented in Chapter 4. This research sought to answer the following two research questions:

1. What factors shape teacher self-efficacy and attitudes towards the provision of differentiated instruction to meet the needs of students with learning difficulties in senior-secondary schools?
2. How do these factors influence the provision of differentiated instruction?

The two research questions are discussed in conjunction with one another rather than separately, so that the impact and influence of each factor is illustrated more clearly to the reader. This was particularly pertinent as factors were complex and had multiple impacts that intertwined with one another. A richer analysis of results is presented.

Five complex factors were identified by the researcher as being impactful upon teacher attitudes and teacher self-efficacy towards DI implementation. These

are: 1) a collective commitment to and responsibility for differentiated instruction, 2) a belief in differentiated instruction is not enough, 3) the presence or absence of identified learning difficulties, 4) practical experience in differentiated instruction and 5) student relationships and student success.

The first research question focused on the factors that shape teacher self-efficacy and attitudes towards DI to meet the needs of students with learning difficulties in senior-secondary schools. The second question focused on how the identified factors in the first question, influence the provision of DI. The aim of this research was to address a gap in knowledge by exploring teacher attitudes towards, and self-efficacy in DI in senior-secondary schooling to improve teacher use of DI and equitable experiences for students with learning difficulties.

5.2 Influences on differentiated instruction implementation

This section identifies the factors that shape teacher self-efficacy and attitudes towards implementing DI to cater to students with learning difficulties in senior-secondary schools. Furthermore, the impact and influence of these factors on the provision of DI are discussed. The following sub-section discussed the first factor that influences the provision of DI—a collective commitment to, and responsibility for differentiated instruction.

5.2.1 Factor 1: a collective commitment to and responsibility for differentiated instruction

This section discusses the importance of school communities, school leaders, and teachers developing a shared commitment and responsibility to understand and implement DI in their senior-secondary classrooms. For DI to be seen as a collective

responsibility, it is encouraged that there be a commitment to 1) ensuring DI is written in school policies and is not isolated to special education, 2) ensuring leaders and teachers have a shared understanding of what DI is, and 3) being inclusive and equitable to all students in senior-secondary years. The first sub-section discusses the importance of having a commitment to differentiated instruction policies. There was a stark contrast between whether teachers valued policies to guide their practice and whether policies were not of value at all, with this research finding that DI policies largely influences teachers to view DI as a special education practice.

5.2.1.1 Commitment to differentiated instruction policies

This research found that one of the major factors influencing teacher attitudes towards DI was when DI was viewed as a practice specifically for special education students, such as students with learning difficulties. Half of the teacher participants in this study stated that they differentiate for students with special needs or learning difficulties, with Jane referring to these students as “lower end students”. This insight confirms the findings of a configurative review by Eikeland and Ohna (2022) which determined that DI is viewed as a philosophy for specific groups of students. In the present research, teachers viewed DI as a special education practice, likely due to DI being included in school special education policies rather than in general teaching and learning policies. This viewpoint was evident in all three schools as eleven of the twelve teachers stated that DI was either written into their equivalent of a special education policy (such as a SWAN policy) or else, was non-existent.

Notably, Jennifer, a deputy principal, was the sole participant to state that DI was written into her school’s general teaching and learning policy, rather than their special education policy. Jennifer was responsible for including DI in the policy.

Jennifer's reason for doing this was her passion for DI and her aim for all teachers to implement DI in their classrooms. Tina and Amber, both colleagues of Jennifer at the same school, stated that they were not aware of this policy and instead reported that DI was in their special education policy.

The fact that DI is written into special education policies and that half of the teacher participants stated they actively differentiate for special needs students, indicates that the teacher participants view DI as a practice for special education students. Furthermore, the results signify that leadership teams and their members, like Jennifer, may be more aware of DI policies than their staff and that there is a need for them to continually educate their staff on such policies. Equally, teachers who are not leaders—those who do not hold a principal, deputy principal or coordination role—in their schools may be less aware of DI policies even if they exist. This finding extends the research insights of Roose et al. (2019), who discovered that the variance in teachers' beliefs regarding DI implementation was due to an absence in policy. Building on this knowledge, the results indicated that policies which categorise DI as special education shaped these teachers' beliefs that DI is exclusively a special education practice. At the same time, Mary and Sally stated that they believed DI to be a form of individual instruction, possibly because there was no overarching policy declaring DI to be a right of all students.

If teachers view DI as a practice specifically for students with special needs, then this detracts from Tomlinson's (2014) proposal that DI is for all students. In this case, teachers may feel they are actioning DI appropriate to how they have defined DI, however, when compared to Tomlinson's (2014) DI framework, teachers may be partially upholding the framework. This is particularly so when teachers differentiate solely for a select group of students, such as those with special needs. Thus, students

who need a differentiated classroom but who do not have special needs may not be as successful in their academic schooling. Hence, special education policies that include references to DI may be doing a disservice to other students who require a differentiated learning environment.

Worldwide, policies are being created with the aim of increasing inclusive education practices to address additional needs of students (Gheyssens et al., 2020a), and policies geared towards inclusive practices may be separate from general teaching and learning policies. Hence, there is a scholarly debate as to whether DI should sit within inclusive education policies or general teaching and learning policies, given that the premise of DI promotes inclusive education (Strogilos, 2018). The results highlight that school leaders like Jennifer have the power to make influential decisions regarding DI application, which aligns with Özdemir et al.'s (2022) finding that school leadership teams influenced teachers' willingness to implement DI. Hence, leadership teams are responsible for and have the power to drive teachers' willingness to implement DI. As such, leaders could first be educated about what DI is and its purpose to inform their teaching staff correctly.

In contrast, however, policies that omitted mention of DI did not appear to have hindered teachers' ability or desire to differentiate their instruction, reflecting that DI policies are not relevant to some senior-secondary teachers, like Jane, who stated that she does not let policy dictate how she teaches. Further research in the value of policy is required, however, as regardless of whether policy did not guide Jane in utilising DI, embedding DI in special education policies still saw Jane view DI as a practice for special education students. Bhattacharya (2017) argued that education has become fraught with policy and that policy changes were not a priority for high school teachers. The results of this research are somewhat consistent with

Bhattacharya (2017) but indicate that for some teachers, they continue to utilise policy to guide their teaching views. The utilisation of policy highlights the importance of ensuring that policies are current and do not mislead teachers. For example, leading teachers to believe that DI is a special education practice, as this can cloud teachers' understanding of certain philosophies and educational practices. The findings further supported Eikeland and Ohna's (2022) contention that without DI being embedded in policy, teachers develop an understanding of DI that limits its application to certain contexts—in this research context, special education.

Like school policies, PD regarding DI experienced by the teacher participants was focused on students with diverse learning needs, rather than presenting DI as a whole-class praxis and philosophy. Amber stated that PD had been delivered on DI but with a focus on students with ASD and Selective Mutism. Likewise, Sally stated that DI PD had focused more on English as an Additional Language/Dialect (EALD) students, indicating that DI may be viewed as for certain groups of students, rather than DI as a whole-class construct. While Yngve et al. (2019) argued that students with additional needs should be given priority, the findings of this research suggest that educating teachers about DI by focusing solely on diverse learning groups may reason DI to be misconstrued as a practice for students with additional needs, despite being intended as an approach for all students.

Therefore, PD focussing on DI practices in senior-secondary schools could outline and dispel such misconceptions for DI to be understood effectively. If such dispelling does not occur, the purpose of DI may not be fulfilled as teachers could mistakenly believe that they are differentiating well, when they are in fact differentiating for select groups of students. It has been established that ongoing PD in DI is crucial for teachers in implementing DI (Gibbs, 2022; Jarvis et al., 2016).

This research supports this premise, further adding that ongoing PD needs to also ensure DI is conveyed as a practice for all students, as to avoid DI being misrepresented. The next sub-section outlines the importance of having a commitment by school leaders and teachers towards differentiated instruction. School leaders influence the professional development their staff engage in, thus, influence how DI is viewed and implemented in one's school.

5.2.1.2 Commitment by school leaders and teachers towards differentiated instruction

This research also highlighted that school leadership that is not invested in DI or in assisting staff to develop their capacity for DI, was a factor that contributed to negative teacher attitudes towards DI. This negativity was seen in Carol's response who stated that her school leadership team had been a "revolving door" and that the focus of DI had been sporadic with a significant loss of traction in implementing DI. Furthermore, school policies that represented DI as a philosophy geared towards special education resulted in a misconception of the DI framework. The results underlined the important role that leadership teams have in ensuring that DI is promoted in the school setting through appropriate PD and the need for DI to be included in relevant policy documents. This point is significant given that DI is not mandated in any formal policy in Australia except in the Australian Institute for Teaching and School Leadership [AITSL] standards (2017). While DI is present in the AITSL standards, the standards do not encapsulate the full philosophy of what DI is and who DI is for, focusing more on outlining that teachers should be differentiating, rather than how to achieve this. Thus, further guidance in what DI is

and how DI can be used would contribute to teachers developing a deeper understanding of the framework and its implementation.

Teacher participants such as Carol and Mary noted, in their opinion, that leadership did not invest in DI and that DI was not a focus for their school. Furthermore, when leadership teams invested in PD that focussed on DI, Carol and Mary stated that PD was sporadic and focussed on students with additional needs, such as those with learning difficulties. It appears that leadership investment, or a shortfall in such investment, contributes to the misconception that DI is for specific students, such as those with learning difficulties. This perception was also stated by Sally and Lisa. Damianidou and Phtiaka (2018) found that teachers' expectations of students were strongly influenced by the severity of a disability or learning difficulty. The findings of this research extends that of Damianidou and Phtiaka (2018) by proposing that school leadership teams contribute to teachers' views that DI is a practice for those with disabilities or learning difficulties. When appropriate PD is not given to staff by school leadership teams, DI may be perceived as a provision for certain demographics of students rather than as a whole-class concept (e.g., just for students with learning difficulties). Similarly, it is likely that time constraints to implementing DI effectively contribute to the shift away from catering to all students' needs to focus only on differentiating for diverse learners.

The present findings indicated that leadership teams influence teacher perception in DI. Furthermore, the results implied that students with learning difficulties may sometimes be moved or encouraged to take subjects that are considered less academically challenging. As the subject selection process is often completed by leadership team members, leadership teams may be impacting upon the learning pathways of students with learning difficulties. According to Lisa, Anna

and Jane, students with learning difficulties were often moved into Essential Mathematics, Essential English, or Community Studies B subjects, which are considered ‘less academic’ by these teachers and leadership teams. Teachers of subjects that are considered more difficult may believe that it is not their responsibility to differentiate for underperforming learners if they have the option to move these learners into classes they consider less challenging. Thus, students with learning difficulties may be limited in their academic options and, consequently, their post-school possibilities. Both Anna, who teaches English, and Jane, who teaches Essential Mathematics, drew attention to this dynamic. Anna stated that “lower-end” students are not characteristically in her standard English class, while Jane noted that she does not have a chance to differentiate for “higher-end” learners as her classroom mainly consists of students who require higher levels of support and are academically challenged.

Given that students in senior-secondary schools have a wider range of subjects from which to select, in comparison to primary and middle years students, placing limitations on the courses that students with learning difficulties can take, may negatively impact their academic growth. Whereas Anna did not specifically state that underutilises DI because of her cohort in standard English, Jane reported that she believes she has more students with learning difficulties in her Essential Mathematics classroom, compared to the more challenging mathematics subjects, and that she often feels pressure to differentiate for them. Hence, teachers may adopt an ‘out of sight, out of mind’ attitude whereby students with learning difficulties are moved into ‘easier’ subjects, while those who teach more academically ‘challenging’ subjects develop an attitude where they do not have to implement DI, particularly if they view DI as exclusively for special education students.

In the senior-secondary context, movement of students with learning difficulties to less academically challenging subjects could result in unequal distribution of duties for teachers. Furthermore, this unfair distribution may create a perception that some teachers need to implement DI more than others. Thus, DI is seen as necessary not just for a select group of students but also for select teachers. Within this dynamic, the responsibility of differentiating then lies solely with some teachers, which also affects students who may or may not have access to, or have partial access to, a differentiated classroom. If some classrooms are not differentiated, then students with unidentified learning difficulties may not have their needs met. The subsequent sub-section discusses the importance of having a commitment to inclusion and equity, which are the premise behind which DI is built upon.

5.2.1.3 Commitment to inclusion and equity

This research has established that policies and leadership teams sometimes treat DI as a special education practice, which has a considerable effect on teachers' implementation of DI. In contrast, the results also highlighted that teacher attitudes towards DI may be shaped by the senior-secondary subjects they teach. In addition to arguing that inclusion and inclusive education is a collective responsibility for all, Ydo (2020) maintained that there is a need to educate teachers on DI and how to achieve inclusion. This research supports that of Ydo (2020) in saying that education of how to achieve effective inclusive education and DI, applies to senior-secondary teachers too. Furthermore, the results from this research highlighted that teachers differentiated in different ways depending on the subject they taught. For example, Amber utilises a Role, Audience, Format, Topic (RAFT) in her English subjects and

Mary utilises modelling in her humanities subjects. Thus, education of how to be inclusive could be achieved through senior-secondary teachers of different faculties sharing, with one another, evidenced-based best practice in inclusive education.

In contrast, pressure for students to obtain certain grades, as outlined by Tina who stated that teachers in her school have pressure to get students' to achieve high grades, may be due to the high-stakes environment of senior schooling (Dulfer, 2019), particularly for Year 12 students who receive an Australian Tertiary Admissions Ranking (ATAR) based on their assessment grades. DI in senior schooling is different from junior and middle schooling because assessment differentiation, also known as differentiation by product, may not be as much a focus in senior-secondary contexts. Sally believed in upskilling students in senior schooling as is done in other schooling levels, but senior-secondary teachers may be more motivated by assessment tasks and grades. This held true for Jane and Linda also, who were either motivated for students to get passing grades in compulsory subjects or motivated by their students achieving higher grades for summative assessment tasks. The pressure for teachers to get their students through the subject with a passing grade, or, with higher academic grades may be influencing the way that teachers differentiate, particularly though differentiation of content and process.

It could be argued, however, that the view that some subjects are more suitable for students with learning difficulties is forced upon teachers by school leadership teams, particularly since it is usually parents/carers, school leadership, and students themselves who decide which subjects' students can take. This mindset too may diffuse responsibility for senior-secondary teachers who misinterpret DI as restricted to special education students. As a result, certain subjects may be viewed as a subject geared towards students with special needs, and students with special

needs may begin to feel that ‘more academic’ subjects are out of their reach. One of the guiding principles of DI is the development of an environment that encourages and supports learning (Tomlinson, 2014). This supportive environment could be reduced in schools where responsibility for DI is diffused or where teachers believe that DI is not their responsibility.

Tomlinson (2004) argued that it is both students’ and teachers’ responsibility to create a differentiated classroom environment—that is, students need to have a voice in how the classroom works, with the teacher not solely responsible for classroom management. The results of this research indicated, however, that responsibility must first start with leadership teams educating staff about DI to cater to students with learning difficulties, as opposed to moving them into ‘easier’ subjects. In this way, students with unidentified learning difficulties may have their needs met more effectively in the classroom and participate in subjects considered ‘more academic’.

This research has highlighted that as students with learning difficulties move into senior-secondary education, they may be moved into a pathway that limits their academic ability and post-school options. For example, Community Studies B subjects do not include a score that can be used towards the calculation of an ATAR (Government of South Australia, 2022), and many university courses, such as engineering, require students to have studied mathematical methods or specialist mathematics to gain entry (University of South Australia, 2022). Hence, if students with learning difficulties are limited in the subjects they can take, their post-school outcomes may also be limited. White (2020) found that educational dropout is more common for students with learning difficulties. This research extends that of White (2020), outlining that even if students do not drop out of school, their pathways in

school may also be limited. Hence, by further restricting students' post school options, the equitable experiences are reduced for those who do continue into senior-secondary schooling. These limitations detract from the very essence of inclusion and inclusive education.

Schools are encouraged to find ways to develop a collective understanding of and collective responsibility for DI so that teachers uphold the DI framework in its entirety. Misconceptions surrounding DI are encouraged to be addressed in policy and by leadership teams so that teachers in senior-secondary education settings can take a unified approach to DI. School leadership teams may believe that having a DI policy is not relevant to them as DI does not exist in any formally endorsed legislation in Australia (Gibbs & McKay, 2021). This research highlighted that including DI within general teaching and learning policies may potentially minimise misconceptions about DI. Hence, Australia is urged to introduce legislation that includes DI and how teachers could utilise DI in their classrooms. Similarly, Sharp et al. (2018) posited that when policies exist, teachers have a clear understanding of DI and clearer expectations behind when and how to utilise DI. Thus, clearer legislation that positions what DI is and who DI is for, may see teachers have a deeper understanding and application of DI itself.

Viewing DI as a practice for students with special needs creates a tension between what the DI framework is built upon, and who actually experiences a differentiated classroom. Yngve et al. (2019) argued that students with additional needs must be prioritised given their need to have the highest level of support within the classroom environment, however, if this detracts from all students receiving a differentiated classroom, then the premise of DI is not upheld. Thus, this research argues that if students with additional needs are the only students to have access to a

differentiated classroom, then the equity of the classroom environment is reduced, even for those without additional needs. All students are entitled to a differentiated classroom, and while this research recognises that students with additional needs may require additional support compared with students who do not have additional needs, this cannot come at the expense of differentiation for all. Furthermore, partial upholding of the DI framework may result in other sub-groups not having their needs met, particularly those students with broad and undiagnosed learning difficulties. The next sub-section outlines the second factor that influences the provision of DI—a belief in differentiated instruction is not enough. While teachers expressed that they believe DI is for all students, this belief was not actioned accordingly, with students with special needs predominantly receiving a differentiated classroom environment.

5.2.2 Factor 2: a belief in differentiated instruction is not enough

Eleven of the twelve teacher participants stated that they knew that DI was for all students and that DI was necessary. Each teacher, however, listed a variety of constraints that they believed hindered their ability to implement DI consistently. Analysis of these constraints demonstrated that constraints resulting from the curriculum framework, such as SACE, QCE, and IBDP, were most prominent. These curriculum constraints were evident in over two thirds of teachers' statements. For example, Carol stated that she could not differentiate at all due to the 80% examinations required in the IBDP.

This research concurs with Gibbs (2022), who determined that inflexible curriculum was also a barrier for secondary school teachers in differentiating appropriately. Likewise, teachers of the QCE, such as Linda and Sally, discussed the

constraints of just being able to differentiate by process (outlined by Tomlinson, 2014) as they stated they believed many assessments cannot be differentiated. Equally, SACE teachers, such as Tina, expressed a similar view but noted that those assessments beyond tests and exams could be differentiated with a little more flexibility in the SACE. For example, Tina outlined that differentiating through written investigations and assignments provided more opportunities for differentiation than tests and exams.

The reduced flexibility in curriculum frameworks may contribute to uncertainty about how far one can differentiate without compromising the regulations of each curriculum framework administrating body. Furthermore, if teachers feel that they are not able to differentiate in a certain way, namely assessments, then this hinders not just teachers' ability to effectively differentiate but also students' ability to demonstrate their knowledge in different assessment formats. Thus, students may not have access to assessments where they can effectively demonstrate what they know, understand, and can do. Ultimately, students may receive less equitable experiences in demonstrating what they have learned.

This research is in line with the findings of Letzel et al. (2022), who found that teachers valued DI but felt that they had insufficient resources to differentiate. While this research confirms that teacher participants valued DI, constraints from the curriculum framework a teacher works in, however, posed challenges to teachers' ability to differentiate. In contrast to the earlier findings of Shareefa (2021), who found that constraints in implementing DI included inadequate planning and preparation time, this research determined that curriculum framework constraints are an additional factor in hindering teachers' ability to differentiate in senior-secondary schooling.

Uncovering the impact of curriculum constraints is an important finding because it contributes to the understanding that senior-secondary teachers face different curriculum constraints in applying DI compared to middle and junior schoolteacher counterparts. These perceptions and experiences of teacher participants align with Haelermans (2022), who discovered that some teachers felt time was a constraint but was not the biggest factor. Similarly, the results underscored that teacher self-efficacy in differentiating for assessment was low because of the constraints they felt they had to navigate, thereby contrasting Ismailos et al. (2022) findings that secondary teachers were confident in differentiation through assessment. This may be a result of working in a different curriculum framework as Ismailos et al. (2022) study was completed in Canada rather than Australia. Senior-secondary teacher self-efficacy in differentiating may not just be attributed to the constraints they believe they have, however, as teachers learn about DI in initial teacher education programs and PD. Hence, developing teachers' sense of self-efficacy in differentiation of assessment is encouraged to begin in initial teacher education programs, so that self-efficacy can be developed early on in one's teaching career.

While this perceived lack of differentiation by assessment means that teachers may be less likely to utilise this strategy, the reduced flexibility in assessment differentiation may further spur these teachers to differentiate in other ways besides assessment. For example, teachers may then utilise differentiation through content or process. Differentiation in ways beyond assessment was seen in responses from Sally and Linda. Hence, when teachers feel restricted from differentiating in certain ways, they may explore other avenues for successful DI. In contrast, the stated reduced flexibility in assessment differentiation may lead

teachers to develop negative attitudes towards DI and thus to differentiate less and instead deliver content through one-size-fits-all teaching.

The impact of such curriculum constraints is reflected in teachers' attitudes, whereby they believe that they can only differentiate to a certain degree, to work within the constraints. This attitude was seen in responses from teachers, like Tina, who indicated that she differentiates everything but timed tests as she stated that she believed them to be compulsory. Similarly, Lisa differentiated by resources in her practical subjects, stating a belief that practical summative assessments could not be differentiated. Last, Mary expressed that she differentiated her learning environment more than her summative assessments, which she stated could not be differentiated.

Utilising DI, only to a certain degree—likely due to the senior-secondary framework one is working in—is new knowledge as DI research has mainly focused on primary and middle schooling in Australia (Dulfer, 2019), which mainly work within the AC and "can be used flexibly by schools" (Australian Curriculum Assessment and Reporting Authority, 2022b, para. 2).

Furthermore, this research extends Smets & Struyven's (2020) three complexities to implementing DI—namely, teacher knowledge of DI strategies, skills to assess learner diversity, and beliefs regarding engaging in DI. This research does so by arguing that curriculum constraints in senior-secondary schooling can also impede teachers' ability to differentiate consistently, and may influence teachers to feel that the DI framework makes it too difficult to differentiate. As such, a belief in DI is not enough to drive teachers in senior-secondary schools to differentiate, and constraints may outweigh their belief in differentiating to the point that teachers differentiate less or as much as they can within the constraints of their curriculum framework.

Teachers also cited inadequate time as a constraint to implementing DI. Elizabeth, Lisa and Michael outlined that they were under significant pressure to cover content and that DI—particularly inventing new ways to differentiate—required more time to plan for and affected their self-efficacy to practise DI. Thus, time is another contributing factor for not implementing DI in Australian senior-secondary schools. This finding is consistent with Yngve et al. (2019) and Melesse (2016) and confirms time as a factor within the Australian senior-secondary context. As a perceived lack of time to differentiate is consistent in the literature, this begs the question as to how schools can provide more time to teachers to prepare and plan for differentiation early on in their DI journey. If teachers can be given time to plan for differentiation and time to implement DI, as they become more efficacious in its implementation, teachers may then become more efficient in DI implementation. Therefore, leading the time needed to plan for DI to be lessened.

Based on this finding, it is crucial that schools provide adequate time for staff to develop a deeper understanding of DI and to practice DI in their classrooms. This could be through the release of teachers from their teaching time, to engage in PD on DI. Nonetheless, the results demonstrated that teachers still tried to implement DI to the best of their ability within the perceived time constraints. This is consistent with Magableh and Abdullah (2021) finding that Year 10 English teachers implemented DI and increased student performance even when facing time constraints. The present research supports that this behaviour extends to Year 11 and 12 teachers and suggests that one's belief in DI may outweigh their self-efficacy towards DI. Thus, becoming confident and developing a higher sense of self-efficacy in DI practices may allow teachers to partially overcome time constraints as a reason for not differentiating. This could be due to teachers having a deeper understanding of how

to implement DI practically and find ways to differentiate more efficiently. A higher sense of self-efficacy, however, allowed these teachers to be more effective at differentiating in the time they have, thus, somewhat overcoming time constraints with self-efficacy.

In contrast, DI has been reported as a suitable practice to cater for classroom diversity (Dulfer, 2019; Frankling et al., 2017; Pozas et al., 2019) and particularly for those with learning difficulties. Senior-secondary teachers, however, face constraints in DI implementation that may see them developing a negative attitude that inhibits their ability to differentiate. This negative attitude may compromise the educational experiences of those with learning difficulties as they are less likely to have their needs met in a non-differentiated classroom and, as established by Harðardóttir et al. (2015), may result in permanent consequences on an individual's post-schooling life. The following section details in the third factor—the presence or absence of identified learning difficulties. Learning difficulties, whether diagnosed or not diagnosed, impacted the way the teacher participants implemented DI and for whom.

5.2.3 Factor 3: the presence or absence of identified learning difficulties

A prominent finding in this research was that there was a stark contrast in how teachers differentiated when learning difficulties were identified as being experienced by a student, compared to learning difficulties that were not identified, or a label applied to the student e.g., dyslexia is a label for a learning difficulty as stated by some teacher participants. This difference saw students with identified learning difficulties and teachers having successful DI implementation versus not

having a clearly identified learning difficulty and less successful DI implementation. An identified learning difficulty for students provided clarity for teachers in selecting what they perceived as suitable strategies to cater to these students' needs. This notion was seen in the statements by Mary, Anna, Amber, and Jennifer. In contrast, the broadness and non-definable nature of learning difficulties—where a diagnosis or identification was not present— resulted in teachers, like Elizabeth and Linda, failing to differentiate well and developing a lower sense of self-efficacy in DI.

Teacher participants presented a varied understanding of what does and does not constitute a learning difficulty. While eleven of the twelve teacher participants stated that learning difficulties were broad, when prompted to describe what this broadness encompassed, various perspectives emerged about learning difficulties. For example, Anna, Jennifer, and Mary stated that learning difficulties encompassed social and emotional challenges, while Carol argued that learning difficulties consisted purely of difficulties with school. Amber and Linda outlined that learning difficulties encompassed diagnosed conditions, such as Dyslexia, Dyscalculia, Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder, and other labelled or identified challenges. The inconsistency in these definitions reflects the variety of definitions found in previous research on learning difficulties, particularly Elkins (2002), Thomas and Whitten (2012), Westwood (2004) and van Kraayenoord and Elkins (2004).

Given that teacher participants in this study lack a clear understanding of learning difficulties, students may be transitioning from secondary to senior-secondary school with gaps in their knowledge in the same way that they move from primary to secondary school with deficits (White, 2020). Therefore, the adoption of a clear and universal definition of what is and is not a learning difficulty in Australia

may prove to be valuable, as clearly defined learning difficulties provide guidance to teachers regarding how and when to differentiate. Having a clear definition for what does and does not constitute a learning difficulty is particularly pertinent as the DDA, DSE and NCCD only outline what constitutes a disability and not a learning difficulty. While the NCCD does outline some of the differences between a learning disability and a learning difficulty, there is still conflicting information as to the differences between the two in other policy and legislation. Thus, students with learning difficulties may not be accurately represented in Australian legislation, compared with students with disability.

While labels or diagnoses of learning difficulties can guide teachers' differentiation, Jane and Elizabeth also reported a fear of labelling students, highlighting a tension between wanting identified learning difficulties for guidance, but not wanting labels that 'box in' students. This concern indicates that these teachers desire to improve students' learning through DI. Scott (2004) argued that incorrect labelling can make it challenging for teachers to select an appropriate intervention for students who experience difficulties. This research, however, contradicts the findings by Scott (2004) as teachers were able to select appropriate strategies for students with identified learning difficulties. Identified learning difficulties, however, may mislead teachers that strategies can be universal for certain subgroups, such as applying a scaffold to all students who have dyslexia. In other words, teachers may feel they are meeting students' needs when in fact students' needs are not being met. Thus, while having a repertoire of DI strategies that can be used to cater for certain students' needs may assist teachers to develop a greater sense of self-efficacy in DI, this does not necessarily mean that students with learning difficulties are having their needs met. The next sub-section titled, practical

experience in differentiated instruction, is discussed. Practical experience in DI saw these teachers develop a greater sense of self-efficacy in DI, having a ripple effect on others.

5.2.4 Factor 4: practical experience in differentiated instruction

The importance of practical experience in DI to teachers' self-efficacy has been established in this research. Linda, Jane, and Sally each shared a DI strategy they often applied, that they were confident in using, and that was known and familiar to them. Hence, these teachers developed a greater sense of self-efficacy towards DI implementation because they felt they could implement DI strategies that were familiar to them, in an effective manner. This finding builds upon Ninković et al. (2022) determination that self-efficacy alone was sufficient to influence Serbian secondary teachers' willingness to use DI practices. Furthermore, this research confirms van Geel et al. (2022) declaration of the importance of practical experience and providing teachers with assistance in practically implementing DI in secondary-school classrooms. The greater self-efficacy from implementing familiar DI strategies builds upon research by Dixon et al. (2014) who found that when teachers were efficacious in their beliefs about teaching students effectively, they were more likely to differentiate. This research, however, extends that of Dixon et al. (2014) by stressing the importance of assisting teachers to become efficacious in strategies beyond those they are familiar with, as a way of growing and developing in DI implementation.

In contrast, this research differs from the findings from Leballo et al. (2021), that all teachers in their research had a deep understanding of DI practices but lacked the confidence to implement said DI practices. The teacher participants in this

research who used DI practices that were familiar to them, were confident in such practices; the reduced self-efficacy, however, was due to fears of branching out beyond what was known and familiar. Similarly, when branching out and failing at a particular strategy, such as when Elizabeth implemented mixed ability grouping, this can also lead to reduced self-efficacy in DI implementation.

While developing a sense of self-efficacy by becoming familiar with DI strategies is important for DI use, there are several potential risks. First, DI may be treated as a series of teaching strategies rather than as the framework, praxis and philosophy it is (Tomlinson, 2014). Many teacher participants in this research also stated they only used DI strategies they were confident in. Smets and Struyven (2020) observed, however, that DI involves more than just teaching strategies and that teachers must believe in DI as a philosophy. As stated, teacher participants believed that DI is for all students, but the constraints they faced hindered their ability to apply DI, which may contribute to the reduction of DI from a philosophy to a series of strategies. As a result, DI may then be viewed as an occasional 'add-on' that allows teachers to believe that they are differentiating well. To prevent this, practical DI experience could go beyond educating teachers about DI strategies to also include practical knowledge of the DI framework as a philosophy.

Another key finding was that for Elizabeth, the feeling that DI led to reduced control in one's classroom was strong enough to stop DI implementation. For example, Elizabeth commented that using mixed ability flexible grouping, a common DI strategy (Tomlinson, 2014), made her feel a lack of control over the class, causing her not to use this practice again and to develop a negative attitude towards this DI practice. Thus, although a teaching strategy can help students to be

successful, teachers also need to feel a sense of success in implementing the DI strategy to want to use this DI strategy again.

Furthermore, student success alone may not be an adequate reason to implement DI, and teachers' feelings of success may outweigh student success as a driver for implementing DI strategies. Similarly, senior-secondary teachers receive students in the latter part of their schooling. By this point, students may have settled into certain practices, and if they have not been exposed to a well-differentiated classroom, they and the teacher may find it challenging to adapt, leading to teachers' developing a feeling of DI being out of control. This feeling of reduced control may further decrease a teacher's sense of self-efficacy, as it did with Elizabeth, if teachers are trying to implement DI and students are not responding as expected. This compromised DI practice may be more challenging for students with learning difficulties, who are often placed within a broad and undefined category.

According to Smets and Struyven (2020), one of the complexities in implementing DI effectively is teachers' knowledge of instructional strategies. In this research, teachers had deep knowledge of a select range of strategies with which they felt comfortable, but teachers did not have enough practical experience in implementing less familiar instructional strategies. For example, Elizabeth knew what mixed ability grouping was, but she struggled with its practical implementation, causing her to develop a negative attitude towards it and avoid its use. Johnston and Wildy (2018) stated that a positive attitude towards a particular DI strategy has the potential to increase student success. While this may be true, the present research implies that failure in a pedagogical DI strategy may make teachers develop a negative attitude towards DI that limits student success.

Woodcock et al. (2022) found too that for teachers to develop a greater sense of self-efficacy in inclusive practices, they need to have practical experience in implementing these practices. This research confirms that DI, as an inclusive practice, needs to be applied practically for teachers to develop a greater sense of self efficacy, though teachers may lose self-efficacy when differentiating outside of their comfort zone. Therefore, it is likely that when a teacher feels "out of control" while applying DI, they are likely to develop both a negative attitude towards DI and a lower sense of self-efficacy in DI practice. Hence, gradually exposing teachers to certain DI elements and supporting them throughout this process may be more effective, than expecting teachers to differentiate effectively in the beginning.

Goddard et al. (2019) argued that while DI is complex, efficacious teachers are more likely to be persistent and resilient in the face of such complexity; however, this was only observed among less than a quarter of teacher participants in this research. Efficacious teachers were those who utilised DI strategies that were familiar to them, but many teacher participants were unwilling to move beyond their comfort zone to learn about other DI strategies. Their hesitancy to branch out may have been due to the constraints they faced, the shortfall in leadership support for DI, and their shortage of knowledge on how to cater to various learning difficulties. Sustained PD in DI that focuses on practical DI implementation, however, may reduce such hesitancy as teachers may develop deeper knowledge of DI practices for students with learning difficulties. Furthermore, increased leadership support in implementing DI, as well as finding ways to differentiate within such curriculum constraints may also see a reduction in hesitancy to branch out from one's comfort zone.

Carol and Michael expressed a desire to learn more about DI, underscoring the value teachers place on DI despite the complex senior-secondary school context and the challenges of differentiating. Given the centrality of practical experience in DI, schools are encouraged to find ways for teachers to gain additional practical experience. This proposal is supported by Whitley et al. (2019), who found that if teachers see a significant positive impact on their students when using a certain pedagogical approach like DI, there is a considerable change in their beliefs and attitudes. Hence, if senior-secondary teachers are better supported, they may be able to become more efficacious in DI.

Furthermore, DI requires investment by school leadership teams, in informing teachers about the framework itself to avoid the misconception that DI is just a series of strategies for students with special needs. Sogo and Jeremiah (2018) revealed that effective DI requires teachers to consider the effects of learning techniques on students and to adapt accordingly, but the results of this research suggest that teacher participants may not be effectively differentiating because they prefer to remain in their comfort zone. Hence, students with learning difficulties may consistently fail to have their needs met due to teachers' uncertainty about how to do so effectively and in response to their needs.

Findings of this research highlighted that common DI strategies for these teachers allowed them stay within their comfort zone. Overall, the results indicated that when teachers had a repertoire of effective and evaluated DI strategies, they were more likely to repeatedly use these techniques. Not all students, however, will respond to the same strategy. Hence, when DI strategies are put in place for a certain purpose, that purpose may not be achieved for all students. Godor (2021) determined that teachers' personal preferences for certain pedagogical practices can dominate

their teaching practices. Likewise, familiarisation with certain pedagogical practices may also play a role in their overuse, which may hinder satisfaction of the needs of individual students. The final factor that influences the provision of DI—student relationships and student success—is discussed. When teachers had strong relationships with their teachers, they were often included in the DI planning process, with teachers gaining a greater sense of self-efficacy in DI implementation.

5.2.5 Factor 5: student relationships and student success

When teachers developed deep knowledge of their students, secured trusting relationships with them, and allowed for student agency in the DI planning process, teachers were able to become more efficacious in implementing DI and students noticed success in achieving their learning goals. For example, Sally explained that her students were more confident in the classroom when she differentiated and had a strong rapport with them. Likewise, Mary outlined that the trust she developed with her students allowed her to help her to work more closely with her students. Furthermore, her students became more aware of how to improve in their learning. Similarly, Jennifer spoke about how trusting and knowing her students meant that they can voice how they want their differentiated classroom to look, giving students agency and motivation in their learning. Furthermore, Carol further explained that trust meant she could help her students see success and assist them in progressing their learning.

Whitley et al. (2019) also noted the importance of seeing an impact on students when using a certain pedagogical approach such as DI. This research underlines the findings by Whitley et al. (2019), however, outlining that teachers must additionally have a deep understanding of their learners and trusting

relationships to be able to develop positive attitudes towards the DI framework. Furthermore, trusting relationships and a positive attitude likely leads to regular DI use in the classroom. This research highlighted that trusting one's students and having strong relationships with them may promote greater self-efficacy for teachers by making student success evident. This finding was not found in the existing literature and suggests that teachers need to be encouraged to develop ways to become acquainted with students for mutual trust and, consequently, quality differentiation to occur. Not only does trust appear to have benefits for teachers' self-efficacy, but, as indicated by Scarparolo and MacKinnon (2022), students are more engaged and feel a sense of freedom because they have more input in their learning.

In contrast, the results demonstrated that when teachers developed a stronger relationship with their students, they tended to implement reactive DI rather than proactive DI. Michael, Carol, Jane and Sally each discussed the positive nature of reactive DI in their classrooms. Carol, however, also acknowledged that DI in her classroom could have been more proactive and is encouraged to be planned for. Tomlinson et al. (2008) argued that DI is not a practice that teachers improvise, and that the most powerful differentiation occurs when teachers use pre-assessment and ongoing assessment. The results from this research indicated that while confident teachers engage in reactive DI and likely attend to student needs, reactive DI may not be the most effective approach to differentiating for their learners. Stollman et al. (2021) argued that proactive DI is necessary for effective differentiation but is difficult to implement because of factors such as inadequate time, or in this case, curriculum constraints. Nonetheless, teacher participants reported that reactive DI was beneficial for them in adjusting as student needs emerged. Thus, while teachers

who engage in reactive DI may not be utilising DI in its most effective form, reactive DI was still viewed as beneficial for the teachers and students themselves. Furthermore, this research concurs with Stollman et al. (2021) in that many of the teacher participants asserted that time was a driving factor in their decision not to differentiate. Likewise, Stollman et al. (2021) argued that reactive DI is the reality because of factors mentioned earlier, such as inadequate time, with proactive DI being minimised because of this.

The point of concern regarding reactive DI is that while it is likely to accommodate the needs of individuals or small groups with learning difficulties—for example, Amber stated that her reactive DI occurs when she sees students struggling—reactive DI may not address all learner needs within the classroom beyond those who struggle in the lesson. This finding was consistent with Sharp and her colleagues' (2018) determination that reactive DI mainly takes the form of adjustments for individuals, small groups and those with special needs, rather than for all students in the classroom. This focus on adjustments only for students with special needs could be seen as inequitable if they are the only students to receive adjustments to their learning.

The broader issue is that the constraints that teachers feel hinder their ability to implement proactive DI need to be minimised. If this occurs, teachers may be more likely to engage in proactive DI that will benefit all students, thereby upholding the DI philosophy that DI is for everyone rather than just those with learning difficulties. When teachers utilised DI and saw their students succeed in a differentiated classroom, this likely increased their self-efficacy as well as helped them to develop a positive attitude towards the DI framework. Indeed, Sally, Michael, Mary, Linda, Anna and Amber acknowledged the myriad of observational

factors they used as indicators for student success and stated that DI is something they strive to do for all students. Research by Hauerwas and Mahon (2018) focused on both teacher attitudes and self-efficacy. Hauerwas and Mahon (2018) found that positive attitudes towards inclusive practices were not sufficient to support working in an inclusive manner. Furthermore, they found that self-efficacy of teachers was needed for acceptance of students with additional needs in the classroom. Hauerwas and Mahon (2018) further observed that the link between self-efficacy and teacher attitudes is unclear. The present findings also supported that teachers require a positive attitude to implement DI consistently; however, self-efficacy was driven by student success and positive relationships. In other words, when DI lessons go well, teachers have positive relationships with students and see student success, and they are therefore likely to experience a greater sense of self-efficacy in DI.

Teacher participants who expressed a sense of self-efficacy in DI also expressed a willingness to assist their colleagues in implementing DI, highlighting the effect self-efficacy in DI can have on teachers wanting to assist colleagues in DI implementation. Ninković et al. (2022) found that self-efficacy alone was enough to influence teachers' willingness to use DI practices. This research further proposes that heightened self-efficacy may also influence whether a teacher shares their practices with other teachers. Given that the teachers expressed that differentiating was challenging because of inadequate time, it is important to find time for teachers to share and collaborate. Each of the teacher participants identified a variety of factors that compelled them to implement DI. While nearly all believed that DI is for all students, each teacher also listed other drivers that appeared to impact their attitude and self-efficacy.

Despite the various constraints that can impede teachers' ability to differentiate for all students, several teacher participants believed that DI was morally right and that students are entitled to a differentiated classroom. This notion was particularly prevalent in Linda's response who stated that DI was morally right and that all students have the right to achieve in their classroom through equitable and inclusive means. This finding was not found in the reviewed literature as no past findings discussed the importance of a moral stance toward DI. Szumski et al. (2020) found that teachers who believe in the morality of inclusive education were less likely to have negative attitudes towards students with disabilities. Linda's response indicates a possible link between moral beliefs in DI and DI implementation. This research cannot comment, though, on whether taking a moral stance on DI can lead to negative attitudes towards students with learning difficulties.

A significant driver for differentiation by the teachers was the desire for their students to be successful. Success was defined differently by different teacher participants—Amber, Sally and Linda discussed academic success in the form of grades and earning a higher ATAR, whereas other teacher participants discussed the development of skills. For example, Sally explained that she wanted her students to develop skills through their assignments, while Lisa referred to student success as her students being engaged. Similarly, Michael was driven to differentiate in order to evoke a 'happy' response in students. Karst et al. (2022) found that when teachers see their students succeed, they are more likely to cater to their individual needs. Results showed success can be understood both in terms of academics and engagement. This finding is important because although students' grades comprise their ATAR, student grades were not reported as the sole focus of these senior-secondary teachers; teachers also desire their students to be engaged and happy in

their lessons. Hence, observable factors by teachers may play an important role as happy and engaged students are likely to contribute to positive teacher attitudes towards DI. The next section provides a summary of key points made throughout this chapter.

5.3 Summary

Senior-secondary schooling is complex, and the factors that influence the provision of DI are complex too. A variety of interlinked factors impact teacher attitudes, self-efficacy or both. Viewing DI as a special education practice may not result in DI being implemented to the best effect. To prevent this, DI must be clearly understood by school leaders and teachers, with clear policies needed both locally and nationally establishing that DI is for all.

Though teachers stated they believe that DI is for everyone, the constraints they face impede them from applying this belief. Minimising constraints both through curriculum frameworks and systemic approaches will permit DI to be applied more consistently and promote positive attitudes toward DI among teachers. Learning difficulties can both benefit and hinder DI practices. While an identified learning difficulty can provide guidance, such identified needs may lead teachers to rely repeatedly on familiar DI strategies. This may result in a scarcity of meaningful growth in learning and applying new DI strategies.

Practical DI application is important as this allows teachers to develop their skills in DI, further impacting their attitude towards the DI framework and self-efficacy. There is a link between attitudes and self-efficacy fuelled by teachers having trusting relationships with students and seeing the impact of differentiated classrooms on student success. Similarly, senior-secondary teachers are driven to

apply DI not just by academic success but also by observational factors such as having happy and engaged students.

Chapter 6 discusses the contribution of the research to the wider body of research in differentiated instruction and examines both implications for theory and practice. The potential for further opportunities to explore DI in senior-secondary schooling are highlighted, and the limitations of the research are outlined. Furthermore, the following chapter reflects on Tomlinson's (2014) DI framework and the conceptual framework, and how the research data informs reconsiderations to the two frameworks and what this means for future research in this area.

CHAPTER 6: CONCLUSION

6.1 Introduction

This research emanated from the identified opportunity to investigate teachers' experiences with DI in senior-secondary settings, to ascertain what contributes to a favourable attitude towards DI and shapes teachers' self-efficacy in DI implementation. The research began guided by the question of what factors impact teacher attitudes and self-efficacy towards DI in senior-secondary setting, and the influence of such factors in the provision of DI. As identified in Chapter 1, DI was referred to as a philosophical framework and praxis that shows promise in addressing classroom diversity (Gheyssens et al., 2020b). The aim of this research was to advance understandings behind the factors that impact why teachers choose to, or choose not to, implement DI in their classrooms and the implication this has for students with learning difficulties.

This research utilised a social constructionist paradigm to determine the researcher's position throughout the study. A qualitative approach was used that incorporated the methodologies of semi-structured interviews and personal artefacts to explore teacher attitudes towards, and self-efficacy in DI. This research focused on 12 senior-secondary teachers from two Australian states, namely South Australia and Queensland. These teachers varied in terms of gender, age, teaching experience, subject areas taught, and qualifications.

To investigate the factors that may contribute towards teachers' use of DI, a collective case study was performed. Data were analysed using a reflexive thematic analysis (Braun and Clarke, 2021) to generate themes that could be linked back to the research questions, and gather new knowledge to add to existing literature in this field.

In the first section of this chapter, the significance of the study is illuminated and implications for theory and practice are outlined. Furthermore, theoretical and conceptual frameworks employed are examined. The second section of the chapter discusses the methodological contributions and general limitations of this qualitative study. In the third section, recommendations for future research are suggested. The following section outlines the significance of this research.

6.2 Research significance

Investigating the factors that contribute to teacher attitudes and self-efficacy in DI from a social constructionist paradigm enabled the researcher to report valuable insights into the complex nature of senior-secondary schools and programming and planning for learning difficulties. The findings expand the limited knowledge of DI in senior-secondary schools in Australia and highlight the various challenges and enablers for teachers' DI implementation.

One of the key points this research revealed, was that leadership teams and policy play a role in shaping teacher attitudes towards DI. The researcher identified that when teachers view DI as a practice solely for students with special needs, accompanying practices detracts from the essence of DI as a form of inclusive education and instead contributes to segregation of students.

This research is significant as students with learning difficulties struggle with academic achievement and are more likely to have poorer post-school outcomes than their peers. Students with learning difficulties may be having their needs partially met due to a variety of factors, such as constraints and teachers' lack of practical experience in expanding their DI repertoire. Thus, there is a necessity for teachers to utilise frameworks, such as DI, in catering to the needs of students with learning

difficulties. There is, however, a requirement—as outlined in the AITSL (2017) standards— for teachers to ensure a differentiated classroom is not just for students with learning difficulties, but for all students.

These findings underline the significant complexities that senior-secondary teachers face in implementing DI. Furthermore, the findings indicated that for DI to address the needs of students with learning difficulties, teachers are encouraged to first view DI as a framework for all students, and to engage in practical PD in DI. The next section discusses the limitations of this research.

6.3 Research limitations

There were several limitations in this research. First, it is important to note that some of the teacher participants in this research were either past or present colleagues of the researcher at the time of data collection, creating potential for a conflict of interest between the researcher and teacher participants. Teacher participants were informed of the potential benefits and risks within the information sheet and were advised that during the research period, they were not to consider the researcher as a colleague. The researcher advised all teacher participants of the researcher's objectivity during the interview to lessen bias in the research outcomes.

It was important that the qualitative research methodology be built upon the principles of academic research. Thus, Braun and Clarke's (2021) RTA approach, which is a well-researched framework, was employed. Furthermore, this research utilised a collective case study as a methodological approach. Furthermore, the research utilised evidence artefacts along with semi-structured interviews as a data collection tool, with evidence artefacts used as a prompt for teacher participants to discuss their DI implementation. While data is subjective in qualitative research,

Stake (1995) acknowledged that a case study relies on the insights of the researcher and the judgements they make, and case study research, therefore, cannot be objective due to individual interpretation and researcher judgement. As such, further investigation of the identified factors is required.

A significant limitation of the research was the relatively small sample size, particularly as teacher participants were solely from the independent school sector, and not from Catholic or government schools. A strength of this research, however, was that teacher participants recruited included senior-secondary teachers who taught a range of subjects, were of varying ages, genders, years of teaching experience and qualifications, to enhance the generalisability of the results. The aim of qualitative research is to explore meaning and concepts (Cohen et al., 2017), and it therefore does not always require a significant number of teacher participants. Thus, while this research had a small sample size, its intention was to discover meaning and not causal relationships.

Last, to minimise the bias that can arise when coding and theming data, the researcher utilised a reflexive journal throughout these processes. This allowed the researcher to continually challenge his thinking by revisiting codes and themes, and deconstructing and reconstructing them in other ways, to determine best fit. While bias needs to be minimised, the subjectivity is seen as a strength when coding and theming in a RTA (Braun & Clarke, 2021). Theoretical implications are discussed in the next section, in particular, the impact this research has on the actioning of Tomlinson's (2014) framework for DI.

6.4 Theoretical implications

There are several theoretical implications of this research. Theoretical implications directly relate to the concept of learning difficulties, as well as the DI frameworks by Tomlinson (2014) and Smit and Humpert (2012). These are discussed below in the following sub-sections: a) implications for learning difficulties and b) implications for differentiated instruction frameworks. Implications for learning difficulties are discussed first.

6.4.1 Implications for learning difficulties

The research highlighted significant variance in teachers' understanding of what constitutes a learning difficulty and revealed that labelled, identified and diagnosed learning difficulties guide teacher practice in DI. The broad and undefined nature of difficulties with learning has created confusion among teachers, who struggle to know how to cater to such broad needs. Given that there is no universal definition of what a learning difficulty is (Skues & Cunningham, 2011), Australia is encouraged to adopt a common definition to reduce this confusion. Diagnoses and identified learning difficulties were important to teachers as a guide for their DI practices, but diagnoses may overshadow the actual needs of the students themselves. Thus, further emphasis on ways teachers can pre-assess their students that are not based on diagnoses may allow teachers to be more fluid and proactive towards their students' diverse needs. Implications for differentiated instruction frameworks are discussed in the next sub-section.

6.4.2 Implications for differentiated instruction frameworks

As outlined in Chapter 2, the DI framework is a philosophy built upon five guiding principles that guide teachers in differentiating effectively. According to

these principles, one of which is pertinent to the results, is that assessment informs teaching and learning. Teachers can differentiate in a variety of ways, such as through content, process, product and/or environment and can do so according to student readiness, interest or learning profile (Tomlinson, 2014), with learning profile more recently acknowledged as learner preferences (Tomlinson & Borland, 2022).

Teacher participants commented that the various constraints senior-secondary teachers experience, such as inadequate time or curriculum framework constraints, hinder teachers' ability to differentiate consistently. Tomlinson (2014) acknowledged in her framework that teachers can differentiate through content, product, process, environment or a combination of the four. This research highlighted, however, that senior-secondary teachers may be differentiating more through content, process and environment rather than through product, which mainly relates to assessment. Thus, senior-secondary teachers may not be utilising DI, according to Tomlinson's (2014) definition, to its full extent.

Similarly, as teachers largely catered to the needs of students with learning difficulties, senior-secondary teachers may be more focused on differentiating according to students' learning profiles/learner preferences rather than their interest or readiness, which also represents ways for teachers to approach DI (Tomlinson, 2014). As such, teachers may be taking a narrow approach in how they differentiate.

Correspondingly, this research confirmed that teachers consider observational factors to be of greater importance than assessment when differentiating; this belief may be attributed to the fact that teachers expressed difficulty with differentiating assessments and therefore, may not use assessment to guide their practices. Hence, the guiding principle of using assessment to guide

differentiation may only be partially upheld in senior-secondary classrooms, and therefore not all student variance is being met.

Another guiding principle of the DI framework is that instruction responds to student variance (Tomlinson, 2014). Though teacher participants reported offering instruction tailored to students with learning difficulties through proactive and reactive means, such adaptations were not discussed for other types of student variance, indicating that senior-secondary teachers may erroneously recognise learning difficulties as the only form of student variance in their classrooms, reactively differentiating for such students.

The implications of reactive DI are twofold. First, reactive DI allows teachers to differentiate to the best of their ability within the constraints they face. Inadequate time is a factor, there is also the added pressure of curriculum constraints in senior-secondary schooling that may contribute to reactive DI use. Thus, while not considered a best practice, one could argue that reactive DI is better than no DI, even if it is likely that not all students' needs are being met in a reactive DI classroom.

Second, while some students with learning difficulties may have their needs met through reactive DI when teachers observe students struggling, reactive DI may contribute to a sense of segregation for those with learning difficulties if these are the only students receiving a differentiated learning environment. Furthermore, not all difficulties may be observable to the teacher; hence, students with less obvious learning difficulties may not thrive in a reactive DI classroom. If senior-secondary teachers prioritise differentiation via content, process and environment over product differentiation and differentiate according to learning profile rather than other methods, teachers are not fully utilising the elements of Tomlinson's (2014) definition for DI.

Therefore, teachers likely take a narrow approach to DI in their senior-secondary classrooms and therefore may not address the needs of all students, thereby limiting student success and outcomes. Tomlinson (2013) acknowledged that the DI framework may be perceived as too ambitious and complex to implement, and this sentiment was echoed by teachers in this research. This complexity, however, may be due to the constraints teachers stated they face in senior-secondary schooling.

In contrast to Tomlinson's (2014) DI framework, Smit and Humpert (2012) highlighted the need for teachers to express a constructivist attitude towards DI—that is, students and teachers share responsibility for the classroom—for DI to be successful. In Jennifer’s classroom, students were part of the DI planning process as Jennifer had developed respectful and trusting relationships with her students, thus confirming that a positive attitude towards DI motivates differentiating (Smit & Humpert, 2012) as well as supporting that trusting and respectful relationships are also needed to build a constructivist DI classroom. Getting to know students and building trust with them is crucial for learning to shift from having the teacher as the sole knowledge provider to students being in charge of their learning. Longitudinal research by Hughes (2011) found long and short term academic benefits for elementary students who had positive relationships with their teachers. This research may extend that of Hughes (2011) to the Australian senior-secondary context, however, further research is required support this. When mutual trust occurs in the classroom between student and teacher, students develop a sense of ownership over their classroom environment and become more self-disciplined (Gregory & Jones, 2013). Therefore, benefits for trusting relationships are beyond just receiving a differentiated classroom. The following section discusses the contributions this

research makes to the conceptual framework that was created from the reviewed literature in Chapter 2.

6.5 Contributions to the conceptual framework

The conceptual framework represented in Figure 2 (Page 71) that informed this research directed the choice of the social constructionism paradigm and the case study methodology. From the reviewed literature, it appeared that educational policies, professional development, pedagogical choices, and self-efficacy may impact upon teacher attitudes towards DI, and thus, teacher implementation of DI in one's classroom. The conceptual framework guided the creation of the two research questions. Semi-structured interviews were conducted to develop a deeper understanding of teachers' lived experiences with DI. The factors that shape teachers' attitudes towards and self-efficacy in DI and, consequently, their implementation of DI, are highly complex and layered. The researcher hoped to update the conceptual framework either by adding or removing factors to create a conceptual framework that was relevant to DI in the senior-secondary context. The factors that impact teacher attitudes and self-efficacy, however, are complex and reducing them to a visual conceptual framework would have misrepresented this complexity. Hence, the key takeaways from the research are discussed in prose.

Educational policies were found to somewhat influence senior-secondary teachers' attitudes. All teachers, except Jennifer, that indicated that DI policies existed exclusively spoke to DI being part of special education policies, which prompted them to cater for the needs of students with learning difficulties but not the class as a whole. A few teachers, however, shared that they do not use policies to

guide their teaching practices; thus, policies may or may not influence teacher practice. This requires further investigation.

An important finding that relates to policy, is the understanding (or lack thereof) of what does and does not constitute a learning difficulty. Reviewed policies and legislation each had varying definitions of what does and does not constitute a learning difficulty, and this confusion appears to have impacted upon teachers' perceived abilities to differentiate for their learners. When learning difficulties were defined or identified, teachers expressed self-efficacy in differentiating, however, when undefined or undiagnosed, teachers stated they were confused with how to differentiate. The implication here is that learning difficulties requires a clearer and universal definition to assist teachers in catering for such learning needs and for teachers to feel a sense of self-efficacy in differentiating. In contrast, teachers are encouraged to be educated in ways that that allow them to get to know their students' strengths, weaknesses and areas for concern, even when undefined or undiagnosed. Thus, the implication of definable and non-definable learning difficulties goes beyond having a DI policy, but into practical ways teachers can understand their students' needs better, as to assist them in becoming more efficacious in DI.

Professional development influenced teacher attitudes both positively and negatively. For example, PD in DI for these teachers mainly consisted of differentiation for diverse learners, thereby contrasting with the philosophy that DI is for all students. This also meant that teachers began to view the DI framework as just for diverse learners, such as those with special needs. When PD was sporadic, this led the teachers to state that DI was an 'add-on' to their teaching practice. The results also indicated the need for practical experience in DI, achieved in DI PD. Thus, PD is suggested to focus on educating senior-secondary teachers about DI and

especially how to implement DI effectively beyond what they already know. Finally, supporting teachers' differentiation, including if they struggle in DI implementation, is crucial to minimising negative attitudes towards DI.

The literature review highlighted that pedagogical and curricular choices may impact teachers' self-efficacy in, and attitudes towards DI implementation. Teacher participants largely differentiated within their comfort zones, evidencing self-efficacy in known and familiar teaching strategies. Lower self-efficacy was noted for teachers who tried to implement new DI strategies they did not see success with, which likely impacted their attitudes towards the DI framework. Hence, teachers may not be continuously developing their DI practices and may instead be relying upon a series of familiar strategies to differentiate.

Finally, self-efficacy may potentially play an important role in attitude formation for senior-secondary teachers given that much of the reviewed literature focused on primary and middle schools outside of Australia. This research supported the association between self-efficacy and teacher attitudes as it is likely that when teachers see their students succeed in a differentiated classroom, that they have both a greater sense of self-efficacy and a more positive attitude towards DI due to its success. Therefore, teachers' self-efficacy in and positive attitudes towards DI are encouraged to be developed for DI to be effectively implemented. In addition to the factors investigated from the original conceptual framework, several other complex factors were identified as being impactful towards senior-secondary teacher attitudes towards and/or self-efficacy in DI.

The results highlighted the need for a collective commitment to, and responsibility for implementing DI. This commitment and responsibility are warranted not only for teachers, but school leaders too, as they are seen to have

influence over what professional learning their staff undertake, as well as the policies created and enacted in their sites. Furthermore, a collective commitment to DI may allow school leaders and teachers to develop and hold a consistent understanding of what DI is and who DI is for, as to avoid DI being seen exclusively for students with special or additional needs. The aim for this collective understanding is that teachers may be able to develop more positive attitudes towards DI if they see DI as being beneficial for all students, not just for students with learning difficulties or disabilities.

Teacher belief systems are complex; and while this research did not focus on exploring teacher beliefs, aside from self-efficacy beliefs, the research highlighted that even when teachers had a positive attitude and belief in DI as a practice, other factors influenced teachers' decisions to not utilise DI. Constraints experienced by the senior-secondary curriculum framework for which one was working in, saw teachers put these constraints before their belief system in DI. Meaning that while teachers stated they believed DI was for all, constraints in curriculum framework hindered DI application for all students. This is a significant finding as it reflects a belief in DI is not enough for one to enact DI consistently.

Lastly, while a few teachers discussed the importance of having positive student relationships built on trust, there was a clear difference in the way these teachers, namely Jennifer, differentiated compared to other teacher participants. Having trusting relationships allowed Jennifer to incorporate student voice in her DI planning, seeing a shift in the teacher constructing the lesson alone, to the teacher co-constructing the lesson with the students. Thus, students had ownership in their classroom and Jennifer was efficacious in DI and had a positive attitude towards DI implementation. Therefore, a contributing factor that appears to link both self-

efficacy in, and attitudes towards DI, is knowing one's students and having positive relationships that allow them to be part of lesson co-construction.

It may be that the ability to include students comes from consistent application of DI in one's classroom and that co-construction takes time for teachers to implement. Therefore, having teachers focus on developing self-efficacy in DI in a practical nature may first be more feasible, than asking teachers to include students in DI planning when they are still developing self-efficacy in DI implementation. This requires more professional development (Dixon et al., 2014) with a practical focus.

Overall, the implications of the findings for both theory and practice raise the question of whether DI is too ambitious for senior-secondary teachers to undertake effectively. While teachers stated that they did differentiate and this was demonstrated in a variety of scenarios in the results, it remains unclear whether the DI that teachers are employing, fully upholds the tenets of the DI framework by Tomlinson (2014). The subsequent section discusses the methodological contributions this research has, from the use of semi-structured interviews and evidence artefacts.

6.6 Methodological contributions

From the reviewed literature, the use of quantitative questionnaires and/or qualitative interviews were identified as the main methodologies for gathering data. While this study utilised semi-structured interviews as the primary method for data collection, this was paired with teacher participants bringing evidence artefacts to the interview. Evidence artefacts were a valuable prompt for teacher participants to delve deeper into how they differentiate and how they represent DI in their planning

(Bogdan & Biklen, 2011; Merriam & Tisdell, 2015). The significance of this research is important for bringing pedagogical conversations to the forefront regarding practicing senior-secondary teachers' perceptions of DI and their role in ensuring inclusive and equitable learning environments are evidenced in their classrooms.

Evidence artefacts were used as a tool for eliciting data when employed as a stimulus, and allowed teacher participants to speak to differentiation, not just with what they do, but how they specifically differentiate for their students. Furthermore, evidence artefacts formed a basis for conversation in learning about different aspects of the teachers' experiences of DI; identified as an effective way to gain teacher participants' greater interest, to have them reference aspects of their experience and knowledge, and to encourage the sharing of more information during interviews by using the documents as the basis for conversation. This methodology could be employed to other educational studies as means to elicit deeper conversations on topics of interest.

This paired methodology was not evident in the reviewed literature, providing the researcher with a unique way to gain deeper insight into teacher attitudes of, and self-efficacy in DI. According to Kuhn (1996) methodological contributions allow researchers to answer new questions of people and groups of individuals in more rigorous ways, and while this was a minor change to traditional semi-structured interviews, the researcher could encourage teacher participants to speak more freely when prompted by their documents. The evidence artefacts allowed for a deeper discussion into DI implementation, which the researcher and teacher participants could speak to while viewing the evidence artefacts together. Similarly, research by Bergh et al. (2022), who created a typology of methodological impact found that

methodological contributions can either be major or minor, and have either a limited or large audience for such contributions. The use of semi-structured interviews with evidence artefacts has both a major and minor methodological contribution. Minor, given that the audience consists of senior-secondary educators with an interest in DI and/or inclusive practices—a narrower audience compared to all teaching levels. Major, however, in that this methodology can be applied to any phenomenon of interest where teacher conversations, thoughts, attitudes and beliefs are of focus. Talking with teachers about their practices is being recognised as more important, bringing "teacher voice" to the forefront. Thus, evidence artefacts can be utilised as a data collection method with teachers at all phases of the schooling system with a focus of any component of teachers' practices, perceptions, and experiences. The following section outlines the implications for future practice that arose from this research. In particular, the importance of ensuring teacher engage in ongoing professional development in DI with the support of school leadership teams.

6.7 Implications for future practice

The results present several implications for future practice. Implications fall under three key areas: 1) ongoing professional learning/development, 2) differentiating more efficiently and effectively, and 3) school leadership and policy, which are discussed below. The first sub-section discusses, focuses on the importance of ongoing professional development.

6.7.1 Ongoing professional learning/development

Practical experience as well as ongoing and sustained PD in DI are vital to ensure that teachers can go beyond what they are familiar with and develop a deeper

understanding of DI strategies and the philosophy as a whole. Similarly, PD needs to focus on differentiating for all learners and the diversity that exists in one's classroom to ensure that DI is understood as a framework and philosophy for all students. To this end, teachers are encouraged to be educated to cater for diversity based on student variance rather than just being guided by diagnoses e.g., learning difficulties, ADHD etc. At the same time, DI PD specifically for students with learning difficulties is also necessary so that teachers can select from a broader range of strategies based on students' actual needs and not just the diagnosis that may be attached to them. Therefore, PD in DI ought to include education about students with and without diagnosed and labelled learning difficulties. Furthermore, schools could locate or provide professional development for teachers in making all subjects accessible to all students so as not to limit their academic potential and to uphold the guiding principles of DI.

Additionally, schools could seek to create professional learning communities that support teachers in differentiating and maximising their time, given they have been shown to be highly effective in upskilling teachers (Prenger et al., 2019). While this will cost schools money to allocate teachers time for PD and to hire relief teachers, teachers will be able to upskill in DI and become more effective and capable in catering for student variance. Schools are encouraged to invest in creating professional learning communities with a sustained focus on DI application. When teachers are more efficacious in DI, they are more likely to share their practices with colleagues, creating a ripple effect on teacher upskilling in DI. Similarly, communities of practice, which are groups of people who come together to share their practice and learn from one another in a particular area (Mercieca & McDonald, 2021) have shown promise in assisting teachers to better their teaching

practice. Hence, communities of practice could be utilised by schools to upskill selected teachers in DI too.

Alternatively, learning walks (Fisher & Frey, 2014) and learning walks and talks (Sharratt, 2018) have been shown to improve teachers' instructional practices and could be used as a method for senior-secondary teachers to highlight the various differentiated practices they feel they do well, during classroom visits by other teachers. Given that Bandura (1997) theorised that vicarious experiences—being modelled a particular action to—was one way of developing self-efficacy, this research highlights that teachers may be able to develop greater self-efficacy through observing good DI practice and implementation. Furthermore, this increased self-efficacy may mean teachers are more likely to include student voice and agency in the DI planning process. Department and faculty heads have shown promise in creating effective professional learning communities too (Vanblaere & Devos, 2018). Given that the results from this research highlighted that teachers' differentiation strategies tended to be subject specific, creating faculty Professional Learning Communities (PLCs) that take teachers on learning walks in other subject areas may be beneficial. Furthermore, more recently quality teaching rounds have shown promise in supporting teachers to collaborate more effectively and in assisting teachers to change their teaching practice regardless of the grade or subject area they teach (Gore et al., 2017; Gore, 2021). Teachers participate in a round that involves discussion of a reading, lesson observation and extended discussion of the lesson. For contextualised improvement in DI, teachers could seek to highlight DI practices in such rounds, to their colleagues. Likewise, PLCs could incorporate time for teachers to share successes in DI implementation with one another, promoting collegial conversations. Collegial conversations could facilitate development of

greater self-efficacy, given that Bandura (1997) highlighted verbal and social persuasion as an effective way of increasing self-efficacy. Teachers could provide encouragement to one another in trialling new DI strategies, further strengthening DI implementation.

Moreover, it was evident that the teachers in this research were effective in DI practices that were familiar to them, but failure to branch out beyond one's comfort zone meant that teachers were employing only familiar strategies in their lessons. To avoid teachers relying on implemented and evaluated strategies, schools could identify ways for teachers to develop their knowledge and practice of DI through formal and informal PD. Due to the time-poor nature of teaching, however, giving teachers more time may not be feasible; as such, promoting DI through collaborative discussions with colleagues in and beyond one's faculty may be more meaningful and practical if this form of engagement is sustained and not only a sporadic focus of the school. When made authentic—that is to say, practical and relevant to teachers—professional development can increase teachers' knowledge and skills (Kousa & Aksela, 2019). Thus, schools are encouraged to make decisions that allow for DI upskilling that suits their schooling context. Upskilling in DI may ultimately lead teachers to include student voice in their DI practice. The practical PD may see teachers develop a sense of mastery, which according to Bandura (1997), is the most powerful way of developing greater self-efficacy beliefs.

Scarparolo and MacKinnon (2022) acknowledged that students want more agency and choice in their learning, and teachers who feel confident in DI are more likely to listen to students' wants and include these desires in their classrooms. Allowing student choice and agency in their learning may be difficult for teachers who lack self-efficacy in DI implementation, or do not fully understand the

philosophy of DI. Hence, trying to embed student agency early on in one's DI learning journey may see them feel overwhelmed in doing so—leading to negative attitudes in DI. Therefore, schools may need to make a commitment to upskilling teachers in practical DI rather than focusing on the theory of DI alone and to support teachers to become confident in DI, as to then have teachers include student voice and agency in their classrooms. Similarly, teachers need to be taught how to develop strong relationships with students for DI implementation to become more effective.

Teachers are encouraged to be educated on ways they can differentiate for students without diagnosed learning difficulties to improve their ability to differentiate for all students. Sharp et al. (2018) also noted that when school policies exist, teachers have a clearer understanding of DI, but the present research further recommends that those policies give teachers practical suggestions for differentiating and better understanding of students' strengths, weaknesses, readiness, and interests.

In this way, even if teachers are unaware of students' learning difficulties, they will nonetheless use formative and pre-assessment techniques to gauge their students' understanding, rather than relying on a preconceived notion of what does or does not constitute a learning difficulty to determine their approach to teaching. If teachers can learn to respond to student variance regardless of whether students have a diagnosed learning difficulty, then they are more likely to be more flexible and uphold the DI principle of providing an environment that caters to student variance (Tomlinson, 2014). Currently, teachers may rely more on diagnoses of learning difficulties to assist them in differentiating appropriately, which suggests that teachers may place students with learning difficulties into inflexible categories (e.g., assuming that all students with dyslexia struggle to decode text or that every student with dyscalculia will struggle with fractions). Moreover, there is an emphasis on

diagnosing to 'fix' students' academic weaknesses rather than focusing on their strengths. The next sub-section raises the question as to whether there are ways of differentiating more efficiently and effectively.

6.7.2 Differentiating more efficiently and effectively

The results highlighted a significant demand for the authorities that administer senior-secondary frameworks, namely the SACE Board, QCAA and the IBO, to educate teachers on how they can differentiate efficiently and effectively within the constraints of these frameworks. These organisations could further remind teachers of the flexibility they have when teaching Year 10–12 subjects and to alleviate fears and misconceptions about what they can and cannot do regarding differentiation, particularly in examinable subjects.

Furthermore, initial teacher education programs could benefit from educating pre-service teachers in such flexibilities too, before teachers enter the teaching profession. Scarparolo and Subban (2021) acknowledged the impact that university coursework and pre-service teacher mentors can have on self-efficacy beliefs. Thus, embedding greater understanding of senior-secondary flexibilities in university coursework may potentially assist teachers in developing greater self-efficacy. Similarly, providing teachers with a better understanding of how to apply DI within their teaching framework could help to reduce their apprehension regarding what they can and cannot do. As a result, teachers can plan for and proactively address the heterogeneity of their classes in a way that applies DI for all students, as opposed to teaching reactively for students with learning difficulties only. In this situation, DI is more segregative than inclusive. Hence, is there a way that teachers can differentiate more efficiently and effectively, particularly given the constraints that hinder their

ability to differentiate? Additionally, there was a perception among many teachers that tests, timed tasks and examinations did not lend themselves to differentiation; thus, authorities are encouraged to educate teachers in the specific ways that tests and exams can be differentiated.

If teachers can assess and differentiate for their students more autonomously, teachers may be able to assess students' knowledge, skills and understanding through a strengths-based approach rather than a deficit approach—that is to say that teachers may be able to embed students' strengths into their differentiated teaching programs. If senior-secondary authorities highlight how teachers can differentiate within the identified constraints, this may alleviate teachers' fears of getting DI wrong and breaching framework requirements. Based on the findings, further research could be undertaken to investigate how the DI framework can be made more accessible to senior-secondary teachers. The following sub-section details in the importance of school leadership and policy for DI.

6.7.3 School leadership and policy

First, while further investigation is still needed regarding whether or not school policies are of value to teachers in DI implementation and if teachers actually observe such policies, the results indicated that special education policies influenced teachers' perception of what DI is and who it is for. Therefore, a clear policy declaring that DI is for all students and not just those with special needs may encourage all teachers—and not just those who teach students with special needs—to feel responsible for implementing DI.

Similarly, the research findings underscore that if policies that encourage DI, exist in school settings, leadership teams as well as teachers have to be made aware

of these policies to ensure that they understand them. Although a few teachers expressed that they do not let policy guide their differentiation process, and therefore policy may be meaningless to them, this does not mean that policies should not exist or are not important. Including DI in general teaching and learning policies prevents DIs conceptualisation as a philosophy and praxis restricted to special education students. A policy that guides teachers' practice in DI will only enhance achievement of the goals of the Alice Springs Declaration (Australian Government, 2019), which aims to support all young Australians at risk and increase educational equity. Therefore, a national policy that supports teachers in implementing DI may be needed first, after which schools can follow suit and create their own DI policy specific to their context. Further research is required regarding why some teachers stated that policies do not guide their teaching practices. The subsequent section discusses future research opportunities and recommendations, based on the findings of this research.

6.8 Future research recommendations

This research is potentially the beginning of a continuing research journey into the complexities of senior-secondary schooling across Australia. The findings suggest that senior-secondary schooling is complex and layered in ways that differ from primary, middle and lower-secondary schools. Examining the complexities and constraints on a broader scale beyond just differentiation could offer a deeper understanding of the curriculum pressures teachers, leadership teams and students experience. Similarly, future research could be centred around the conceptual framework, and further exploring each of the factors that influence the provision or implementation of DI, in ways that validate each factor further.

In addition, it is recommended that data be collected from a range of different schools, particularly those in the government and Catholic sectors, as this research utilised teacher participants from independent schools. As the three schools were located in mid to high socio-economic areas in their respective states, schools in differing socio-economic areas may highlight other complexities not found within this research. Similarly, while the researcher planned to recruit teacher participants from across all states and territories in Australia, this was not feasible, particularly as research was conducted during the height of the COVID19 pandemic in Australia. Ultimately, teachers from Queensland and South Australia were involved. Recruiting senior-secondary teachers from other states and territories may confirm the constraints found in the QCE, SACE and IBDP.

Furthermore, many constraints appeared to hinder teachers' ability to differentiate consistently. In particular, the inadequate time teachers feel they have to proactively plan for DI recurred throughout the literature (Gheyssens et al., 2020b; Tomlinson, 2013; Yngve et al., 2019). Thus, further research is required into what teachers use their planning time for to determine whether they engage in practices that do not maximise that time. Finding ways to differentiate more efficiently and effectively may therefore be a subject of future research. If ways to differentiate more efficiently can be determined, this may lead teachers to implement DI more consistently in their classrooms and lessen their avoidance of DI use.

As indicated by Stollman et al. (2021), future research could also examine teachers' other beliefs beyond differentiation such as inclusion or certain teaching practices, as beliefs are important for teacher change (De Neve et al., 2015). Additionally, while this research focused on students with learning difficulties, research into DI and other student populations with aspects of learner diversity that

exist in senior-secondary schools, such as gifted and talented students, would also be beneficial. Gifted and talented students are not exempt from a differentiated classroom, and investigation into how teachers differentiate for this diverse learning group, may reveal new teaching strategies that differ from students with learning difficulties.

Last, the complexities of the factors that influence and impact senior-secondary teachers' use of DI are difficult to represent in a conceptual framework. Further exploration of such factors, perhaps through a grounded theory approach, may allow for greater depth in the construction of theory on these impacts. The next section provides a summary of key points made from this chapter, and outlines eight recommendations, as a means to build teacher capacity in understanding and applying DI in their senior-secondary classrooms.

6.9 Summary

There are eight recommendations based on the evidence in this research. These recommendations are proposed as ways of building teachers' understanding and practical application of DI and improving overall teacher capacity to effectively create differentiated classrooms for all students.

> Recommendation 1: The Australian Department of Education could seek to adopt a universal policy around the purpose and use of differentiated instruction for all education levels.

> Recommendation 2: Schools are encouraged to adopt their own DI guidelines that are built into general teaching and learning documents, to ensure teachers

have a common understanding of what DI is, who it is for and how to implement it, without limiting DI to special education students.

Recommendation 3: School principals and leadership teams are encouraged to provide guidance to teaching staff in implementing DI practically and support them when and if they fail. Providing time for staff to support one another in differentiation is vital.

Recommendation 4: Authorities that administer senior-secondary frameworks are encouraged to re-evaluate if their restrictions in assessment to allow all students to achieve success in such assessment modalities.

Recommendation 5: Authorities that administer senior-secondary frameworks are urged to model ways teachers can differentiate within these frameworks, highlighting good practice and developing a common understanding of what good DI can look like in senior-secondary schooling.

Recommendation 6: Australia could benefit from a universal definition for what does and does not constitute a learning difficulty, particularly highlighting key differences between learning difficulties, disorders and disabilities.

Recommendation 7: Schools are encouraged to find ways for sharing good DI practices, such as through learning walks or the creation of professional

learning communities, as a means of building teacher capacity in practically implementing DI.

Recommendation 8: Professional development in DI, whether through undergraduate and postgraduate education courses or on-site at schools, is encouraged to focus on DI as a philosophy for all and dispel misconceptions about DI.

In summary, the findings from this research suggest that Australia requires both a clear policy and guidelines for implementing DI in senior-secondary classrooms and a policy defining what constitutes a learning difficulty so that schools can then adopt their own contextual policies. Understanding what DI is and who it is for may reduce misconceptions surrounding it.

The findings also suggest that schools could seek to invest time for teachers to practically engage in DI to develop a sense of self-efficacy and the confidence to share their DI practices with colleagues. If schools fail to invest time for their staff to learn about DI practically, they run the risk of teachers relying solely on known and familiar DI strategies, thereby potentially limiting their students' academic outcomes.

In addition, it appears that teachers focus on differentiating based principally on student learning difficulties. If teachers develop a deeper understanding students' interests or readiness, this may aid in the development of trusting relationships, which may help students to contribute to the DI planning process and take ownership of their learning.

This research has significant implications for both practice and theory and mitigates the paucity of research in senior-secondary schooling in Australia. The results also highlight the impact that teacher attitudes and self-efficacy have not only students with learning difficulties but on those with diverse learning needs in general. Building teacher capacity to differentiate better in senior-secondary classrooms is crucial for the academic success of students with such needs.

The researcher acknowledges a change in his own thinking, due to conducting this research. Well before this research emanated, the researcher too, thought of differentiated instruction as a framework solely for students with special needs, and in the early days of his teaching career, promoting the framework as such to teacher colleagues. Therefore, he resonates with how many of the teacher participants in this study are solely using the DI framework for catering to students with special needs. As the researcher developed a deeper understanding of the framework and its application, he realised that the DI framework is for all students, and that it is the entitlement of all students to be part of a differentiated classroom that promotes inclusivity and equality. During the data collection and analysis phases, the results confirmed to the researcher that DI was being implemented for special education students, much like the view he once held. Thus, sparking a drive for the researcher to educate teachers in the applicability of DI for all students. Prior to conducting this research, the researcher knew that learning difficulties was a term that meant different things to different teachers, and this research confirms that this confusion is still experienced by teachers—particularly as to what constitutes a learning difficulty versus a learning disability. The researcher himself found this challenging when trying to accommodate learners needs in the classroom, when such needs were not clear, further empathising with teacher participants in this research.

The researcher acknowledges that before this research began, he was aware of many constraints in senior-schooling that he witnessed, hindered teachers' abilities to implement DI consistently. The research, however, highlighted whether teachers can differentiate more efficiently and effectively which the researcher aims to investigate further in future research. Overall, the researcher has come away with a clearer understanding of what the DI framework is philosophically based upon and ways he can assist teachers' to hold high self-efficacy beliefs for DI implementation.

Senior-secondary schooling is multifaceted and complex; and such complexities differ from primary and middle school counterparts. Complexities in senior-secondary schooling namely arise from the senior-secondary curriculum frameworks one works within, as each present their own requirements for school completion. DI, too, is a multifaceted framework, with its own complexities. Thus, the complexity of senior-secondary schooling is increased when paired with the complexities of DI. Hence, why the factors that influence the provision of DI were multi-layered themselves. Schools, teachers, and education systems are encouraged to recognise the importance of DI for students with learning difficulties, however, this cannot come at the expense of all students in the classroom, not being able to receive a differentiated classroom. Teachers are all at different levels with their understanding and implementation of DI; nevertheless, when teachers can work together in implementing DI in a sustained manner, that is when they will likely see the benefits of DI in their classrooms, creating more efficacious teachers in DI. If classrooms can become more inclusive, then there will be success for the future children in our senior-secondary schools.

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APPENDIX

Appendix 1 school principal information sheet

Project Details	
Title of Project:	**Factors that impact teacher attitudes and self-efficacy: The influence of these factors on the provision of Differentiated Instruction to meet the rights of students with learning difficulties within senior-secondary schools.**
Human Research Ethics Approval Number:	H21REA101

Research Team Contact Details	
Principal Investigator Details	**Supervisor Details**
Mr. Tom Porta Email: [redacted] Telephone: [redacted] Mobile: [redacted]	Dr. Nicole Green Email: [redacted] Telephone: [redacted] Mobile: [redacted]

Description

Differentiated Instruction (DI), a framework created for the purposes of enabling students to meet their learning goals, leads towards greater inclusivity of education. The DI model of education has been available to educators for 15 years. Research into primary and middle school attitude(s) towards DI has been relatively well-documented, however there is a paucity of research in secondary education and the factors influencing a teacher's attitude towards DI. If the inclusivity of education is to be increased via the implementation of DI in classrooms around Australia, then it is crucial that we understand what factors govern secondary teacher attitudes towards DI and their willingness to implement it.

The purpose of this project is to explore the factors that impact teacher attitudes and self-efficacy and how these factors influence the provision of DI towards students with learning difficulties in senior-secondary schools.

This project is being undertaken as part of the Doctor of Education Program.

The research team requests your assistance as you are the School Principal of potential senior-secondary teachers who have expressed interest in participating in this research.

Participation

While this study does not directly involve you or your school, it is important that you are made aware that some teachers may be undertaking an interview with me for approximately 30 minutes outside of school operating hours.

For privacy reasons, the teachers who participate from your school cannot be disclosed to you. Your school and the teacher's real names will not be disclosed in the research and no comparison will be made between teachers from different schools.

Your decision as to whether you will allow the potential teachers to take part, or not take part will in no way impact your current or future relationship with the University of Southern Queensland.

I have outlined below the expected benefits and risks to the participants, so you are fully informed about how this research study will affect the participants.

Expected Benefits

It is expected that this research project will not directly benefit you. However, it may benefit senior-secondary teachers by allowing them to gain a deeper sense of self and increased confidence in utilising differentiated instruction in their classrooms. Furthermore, it is anticipated that this research may allow teachers to become more confident when teaching for diversity, thus, leading to greater student outcomes.

Participation is completely voluntary, and no incentive will be given.

Risks

For the teachers who participate in the interview, there are no anticipated risks beyond normal day-to-day living, however the below details in minor risks, such as:

- Experiencing anxiety
- Unwanted self-knowledge
- Feelings of self-doubt and lack of confidence
- Social risk/disadvantage

These have been minimised by ensuring that they have the right to withdraw at any time throughout the interview. Should they feel uncomfortable at any time, they can ask the principal researcher to stop interview immediately. Furthermore, the participant will have the right to decline any questions that they do not feel comfortable answering. They will have the opportunity to debrief with the principal supervisor at the conclusion of the interview. To protect the teacher from any social disadvantage, they will not be identified in the research, except by a pseudonym. This is to ensure they have full anonymity in this research. Teacher participation in this research will not been revealed to you as school Principal, and will therefore, not provide an opportunity for social disadvantage for the teacher in their workplace. Teachers will be provided with a full verbatim transcript to ensure their responses are accurate. While feelings of self-doubt or lack in confidence are unlikely, participants can speak to the principal researcher at the end of the session.

Participating teachers who feel the need to discuss any feelings or thoughts beyond the interview, have been advised to access BeyondBlue services below:
BeyondBlue
P: 1300 22 4630
W: www.beyondblue.org.au – chat online available

Privacy and Confidentiality

All comments and responses will be treated confidentially unless required by law.

- The interview will be audio recorded for the purpose of transcription and data analysis.
- Participants will be provided with a copy of the interview transcript to review and endorse prior to inclusion in the project data.
- It is expected that they will have 2 weeks to review and request any changes to the transcript before the data is included in the project for analysis.
- The recording will not be used for any other purposes.
- The principal researcher will have access to the recording, as well as the transcription service company (Triple Transcription) who will be involved in transcribing the audio data into written data.

Please be advised that the research team will take every precaution to maintain the confidentiality of the data.

Participant data will be made available for future research purposes and the data will be stored and shared in a re-identified format.

Participant data will be stored on CloudStor which is a third-party organisations to University of Southern Queensland. Only the principal researcher and Supervisor will have access to this data storage.

Participants can access the results and project summary by emailing the principal researcher for a full copy. This will be in the format of non-identifiable data and will be done on a *mediated* basis.

At the conclusion of the study, participants may request a summary of the results.

Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy.

Consent to Participate

As School Principal, we would like to ask you to sign a written consent form (enclosed) to confirm your agreement to allow the teachers who have indicated they would like to participate in this research project, be allowed to do so. Please return your signed consent form to Tom Porta via email or in person prior to **Friday 28th of May 2021.**

Questions or Further Information about the Project

Please refer to the Research Team Contact Details at the top of the form to have any questions answered or to request further information about this project.

Concerns or Complaints Regarding the Conduct of the Project

If you have any concerns or complaints about the ethical conduct of the research project, you may contact the University of Southern Queensland Manager of Research Integrity and Ethics on +61 7 4631 1839 or email researchintegrity@usq.edu.au. The Manager of Research Integrity and Ethics is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner.

Thank you for taking the time to help with this research project. Please keep this sheet for your information.

Appendix 2 school principal consent form

Project Details	
Title of Project:	**Factors that impact teacher attitudes and self-efficacy: The influence of these factors on the provision of Differentiated Instruction to meet the rights of students with learning difficulties within senior-secondary schools**
Human Research Ethics Approval Number:	H21REA101

Research Team Contact Details	
Principal Investigator Details	**Supervisor Details**
Mr. Tom Porta Email: [redacted] Telephone: [redacted] Mobile: [redacted]	Dr. Nicole Green Email: [redacted] Telephone: [redacted] Mobile: [redacted]

Statement of Consent	

By signing below, you are indicating that you:

• Have read and understood the information document regarding this research project.	☐Yes / ☐No
• Have had any questions answered to your satisfaction.	☐Yes / ☐No
• Understand that if you have any additional questions you can contact the research team.	☐Yes / ☐No
• Understand the research project and what it requires of teacher participants in your school.	☐Yes / ☐No
• Grant permission for the researcher to conduct the above named research in your school as described in the information sheet.	☐Yes / ☐No
• Understand the privacy and confidentiality of any teacher participants will be protected.	☐Yes / ☐No
• Have the right to terminate the research study in your school at any time.	☐Yes / ☐No

School Principal Name	
School Principal Signature	
Date	

Please return this sheet to Tom Porta prior to undertaking the interview via email or in-person.

Appendix 3 participant information sheet

Project Details

Title of Project:	**Factors that impact teacher attitudes and self-efficacy: The influence of these factors on the provision of Differentiated Instruction to meet the rights of students with learning difficulties within senior-secondary schools.**
Human Research Ethics Approval Number:	H21REA101

Research Team Contact Details

Principal Investigator Details
Mr. Tom Porta
Email:
Telephone:
Mobile:

Supervisor Details
Dr. Nicole Green
Email:
Telephone:
Mobile:

Description

Differentiated Instruction (DI), a framework created for the purposes of enabling students to meet their learning goals, leads towards greater inclusivity of education. The DI model of education has been available to educators for 15 years. Research into primary and middle school attitude(s) towards DI has been relatively well-documented, however there is a paucity of research in secondary education and the factors influencing a teacher's attitude towards DI. If the inclusivity of education is to be increased via the implementation of DI in classrooms around Australia, then it is crucial that we understand what factors govern secondary teacher attitudes towards DI and their willingness to implement it.

The purpose of this project is to explore the factors that impact teacher attitudes and self-efficacy and how these factors influence the provision of DI towards students with learning difficulties in senior-secondary schools.

The research team requests your assistance because you are a senior-secondary educator who can provide insight into the reasons why you choose to, or not, engage with the differentiated instruction framework in your senior-secondary classrooms.

This project is being undertaken as part of the Doctor of Education Program.

Participation

You will participate in an interview that will take approximately 30 minutes of your time.

The interview will take place at 546 Portrush Road, Glen Osmond, known as Seymour College. For participants who cannot attend a mutually agreed time to

meet face-to-face, a Zoom link will be provided to you via email prior to the interview date, allowing you to participate virtually.

You are free to decline any question(s) you do not want to answer.

Furthermore, you are asked to bring along copies of your planning documents that highlight your use of differentiated instruction in your senior-secondary classrooms. These may take the form of:

- Lesson plans
- Notes
- Lesson observations
- Online learning materials
- Unit plans

The interview will be audio recorded.

Your participation in this research project is entirely voluntary. If you do not wish to take part, you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

You will have an opportunity to view your verbatim script to request any changes or withdrawals from your interview responses. You can provide this feedback for up to 2 weeks from the date of receiving the script. You will be unable to withdraw data collected about yourself after this period. If you do wish to withdraw from this project, please contact the Research Team (contact details at the top of this form).

Your decision whether you take part, do not take part, or to take part and then withdraw, will in no way impact your current or future relationship with the University of Southern Queensland or your workplace.

Expected Benefits

It is expected that this research project will not directly benefit you. However, it may benefit senior-secondary teachers by allowing them to gain a deeper sense of self and increased confidence in utilising differentiated instruction in their classrooms. Furthermore, it is anticipated that this research may allow teachers to become more confident when teaching for diversity, thus, leading to greater student outcomes.

Participation is completely voluntary, and no incentive will be given.

Risks

In participating in the interview, there are no anticipated risks beyond normal day-to-day living, however the below details in minor risks, such as:

- Experiencing anxiety
- Unwanted self-knowledge
- Feelings of self-doubt and lack of confidence
- Social risk/disadvantage

These have been minimised by ensuring that you have the right to withdraw at any time throughout the interview. Should you feel uncomfortable at any time, it is recommended you ask the principal researcher to stop the interview

immediately. Furthermore, you have the right to decline any questions that you do not feel comfortable answering. You will have the opportunity to debrief with the principal supervisor at the conclusion of the interview. To protect you from social disadvantage, you will not be identified in the research, except by a pseudonym. This is to ensure you have full anonymity in this research. Your participation in this research has not been revealed to your school Principal, and will therefore, not provide an opportunity for social disadvantage in your workplace. Similarly, your responses will not affect the working relationship you have with the principal researcher. You will be provided with a full verbatim transcript to ensure your responses are accurate. While feelings of self-doubt or lack in confidence are unlikely, should you feel these it is encouraged that you withdraw from the interview and speak to the principal researcher at the end of the session.

Should you feel the need to discuss any feelings or thoughts beyond the interview, you can access BeyondBlue services below:
BeyondBlue
P: 1300 22 4630
W: www.beyondblue.org.au – chat online available

Privacy and Confidentiality

All comments and responses will be treated confidentially unless required by law.

- The interview will be audio recorded for the purpose of transcription and data analysis.
- You will be provided with a copy of the interview transcript to review and endorse prior to inclusion in the project data.
- It is expected that you will have 2 weeks to review and request any changes to the transcript before the data is included in the project for analysis.
- The recording will not be used for any other purposes.
- The principal researcher will have access to the recording, as well as the transcription service company (Pacific Transcription) who will be involved in transcribing the audio data into written data.
- This research requires data to be audio recorded for analysis. Should you not want your data recorded you will not be able to participate in this research.

Please be advised that the research team will take every precaution to maintain the confidentiality of the data.

Participant data will be made available for future research purposes and the data will be stored and shared in a re-identified format.

Participant data will be stored on CloudStor which is a third-party organisations to University of Southern Queensland. Only the principal researcher and Supervisor will have access to this data storage.

Participants can access the results and project summary by emailing the principal researcher for a full copy. This will be in the format of non-identifiable data and will be done on a *mediated* basis.

At the conclusion of the study, you may request a summary of the results.

Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy.

Consent to Participate

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to participate in this project. Please return your signed consent form to a member of the Research Team prior to participating in your interview.

Questions or Further Information about the Project

Please refer to the Research Team Contact Details at the top of the form to have any questions answered or to request further information about this project.

Concerns or Complaints Regarding the Conduct of the Project

If you have any concerns or complaints about the ethical conduct of the research project, you may contact the University of Southern Queensland Manager of Research Integrity and Ethics on +61 7 4631 1839 or email researchintegrity@usq.edu.au. The Manager of Research Integrity and Ethics is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner.

Thank you for taking the time to help with this research project. Please keep this sheet for your information.

Appendix 4 participant consent form

Project Details	
Title of Project:	**Factors that impact teacher attitudes and self-efficacy: The influence of these factors on the provision of Differentiated Instruction to meet the rights of students with learning difficulties within senior-secondary schools**
Human Research Ethics Approval Number:	H21REA101

Research Team Contact Details	
Principal Investigator Details	**Supervisor Details**
Mr. Tom Porta	Dr. Nicole Green
Email:	Email:
Telephone:	Telephone:
Mobile:	Mobile:

Statement of Consent

By signing below, you are indicating that you:

• Have read and understood the information document regarding this project.	Yes / No
• Have had any questions answered to your satisfaction.	Yes / No
• Understand that if you have any additional questions you can contact the research team.	Yes / No
• Understand that the interview will be audio recorded.	Yes / No
• Are over 18 years of age.	Yes / No
• Agree to participate in the project.	Yes / No

Participant Name	
Participant Signature	
Date	

Please return this sheet to Tom Porta prior to undertaking the interview in person or via email.

Appendix 5 interview schedule

30-minute interviews (allow for 45 minutes)

Period	Aspects

Warming up / Establishing Rapport	• Interviewer to re-read important points from information sheet to interviewee and ask: *Do you have any questions for what I just explained?*
	• Ask interviewee: *May I turn on the digital recorder?*
	• Establish rapport
	  ○ How many years have you been teaching for? Tell me about your teaching career.
	  ○ What is your education background? Where did you complete your university studies? (specific uni degrees)
	  ○ Have you always taught senior-secondary education?
	  ○ What senior-secondary subjects taught do you teach currently and have taught in the past?

Exploration Phase *Introduction to DI & Learning Difficulties*	• What do you think is meant by the term differentiated instruction? What does this look like in a senior-secondary classroom?
	  • **Possible prompts:**
	  • What do you do in your classroom to promote inclusion?
	• What are learning difficulties and what do they consist of?
	  • **Possible prompts:**
	  • Many students with Individual learning Plans often have identified learning difficulties – can you describe their needs if you have students with an ILP?
	• When did you first come to know about DI?
	  • **Possible prompts:**
	  • Did you receive formal training in DI during your teacher education?
	• How have you learnt about differentiated instruction during your teaching career? Consider any professional learning.
	  • **Possible prompts:**
	  • describe any professional development or university topics you have undertaken geared towards differentiated instruction?
	• What are the difficulties associated with using differentiation in your lessons? Adapted from Dulfer (2019).
	  • **Possible prompts:**
	  • Classrooms consist of students with various needs – how do you manage to ensure all your students receive an equitable education?
	• Describe a time when you successfully differentiated for your senior-secondary school classes. How did this make you feel?
	  • **Possible prompts:**
	  • What were you teaching at the time?
	  • What were your students doing?

Exploration Phase *Depth in DI Attitudes*	• How do you know when you are effectively meeting the different learning needs of every student in your classroom? Adapted from Chandra Handa (2020).
	  • **Possible prompts:**
	  • What indications are there?
	  • What are your students doing in a successful classroom?
	  • What might your students be saying?
	  • What are you doing when you know you are meeting the needs of your students?
	• DI utilises a variety of assessment strategies – describe when you used a variety of strategies and how confident you were in using these strategies to accommodate for students with learning difficulties. Adapted from Monteiro et al. (2019).
	  • **Possible prompts:**

	• For example, DI can involve the use of exit cards and formative assessment to guide decisions for future lessons.
	• Why do you choose to, or not to utilise differentiated instruction in your senior-secondary classrooms?
	  • **Possible prompts:**
	  • What makes DI challenging?
	  • What makes DI achievable?
	• What are the positive and negative aspects associated with implementing differentiated instruction? Adapted from Helena Martins et al. (2018).
	  • **Possible prompts:**
	  • When you have utilised DI, what do you notice about your students and yourself?

Exploration Phase *Self-efficacy and DI*	• What benefits do you receive by utilising differentiated instruction? Adapted from Filipi and Keary (2018).
	  • **Possible prompts:**
	  • Consider how you think, feel, or act after you have successfully differentiated?
	• Are you confident in using differentiated instruction? Why/why not?
	  • **Possible prompts:**
	  • Think back to what made you feel confident / not confident – what were you doing?

Exploration Phase *Leadership & DI*	• Does the school or leadership team support you in implementing and using differentiated instruction? Consider the culture of the school. (if yes, ask, 'in what way?')
	  • Possible prompts:
	  • Has the school offered any professional development as part of PD days or any other formal training?
	  • Describe how your leadership team approaches differentiated instruction.
	  • Do you have colleagues to discuss DI with, and/or to learn from?
	• What policies exist in your school setting (if any), that support the use of differentiated instruction?
	  • These may be formal or informal policies, or faculty specific documents that promote differentiated instruction.

DI Planning Documents	• Describe where differentiation instruction is, within the planning documents you have provided and how you have differentiated?
	  • **Possible prompts:**
	  • Where do you see differentiation in your planning documents?
	  • Describe who you were differentiating for?
	  • Plans to practice – what are your challenges and successes?

Interview finalisation	• Summarisation (by the interviewer) • Reminder of benefits of participation in the research • Reminder to interviewee that data will be transcribed by pacific transcription, and the verbatim script will be provided to them via their nominated email for review for a two-week period. • Interviewer to ask*: Is there anything else you would like to comment on that I have not already asked you about?* • Interviewer: *Thank you very much for your time and the information you shared today*.

Given that semi-structured interviews require flexibility, only a selection of interview questions have been provided, to allow for unexpected questions to be asked during the interview, based on participant responses. It is important to note, that the **possible prompts** may not be used, or adapted, based on the final questions included in the interview.

Appendix 6 Ethics Approval Confirmation

From: Human Ethics
Sent: Wednesday, 19 May 2021 8:29 AM
To:
Cc: Nicole Green; Nicole Todd
Subject: USQ HRE H21REA101 Review commendation

Dear Tom

Thank you for submitting your Human Research Ethics (HRE) application H21REA101, "Factors that impact teacher attitudes and self-efficacy: The influence of these factors on the provision of differentiated instruction to meet the rights of students with learning difficulties within senior secondary schools." The USQ HRE reviewers have reviewed your application and have granted approval with no further comments provided for consideration.

The reviewers commend you for preparing a comprehensive, precise and considered application.

Your research project can now proceed. We wish you all the very best on your research journey.

Kind regards,

Sam
Samantha Davis
Ethics Coordinator
Office of Research I University of Southern Queensland
Toowoomba I Queensland I 4350 I Australia
Ph: +61 7 4687 5703 I Fax: +61 7 4631 1995

Dear Tom

I am pleased to confirm your Human Research Ethics (HRE) application has now been reviewed by the University's Expedited Review process. As your research proposal has been deemed to meet the requirements of the National Statement on Ethical Conduct in Human Research (2007), ethical approval is granted as follows:

USQ HREC ID: H21REA101
Project title: Factors that impact teacher attitudes and self-efficacy: The influence of these factors on the provision of Differentiated Instruction to meet the rights of students with learning difficulties within senior secondary schools.
Approval date: 19/05/2021
Expiry date: 19/05/2024
USQ HREC status: Approved