

# ‘I do not think I actually do it well’: a discourse analysis of Australian senior secondary teachers’ self-efficacy and attitudes towards implementation of differentiated instruction

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**Differentiated instruction is a proactive teaching model and philosophy with demonstrated potential to cater for diverse learners and create inclusive classrooms. There is little research, however, into the implementation of this approach in the senior secondary classroom. Teachers’ implementation of differentiated instruction has been shown to be linked to teacher attitudes and self-efficacy in other settings. This study investigated the impact of teachers’ self-efficacy and attitudes towards the implementation of differentiated instruction in the senior secondary context across two Australian states with a total of five participating teachers. The A (Affective) B (Behaviour) C (Cognitive) model was employed to define teacher attitudes from interviews concerning differentiated instruction. Findings indicated that teacher knowledge was a major factor influencing differentiation, in addition to attitude and self-efficacy. The discourse analysis demonstrated that teachers held a greater knowledge of differentiation strategies than the concepts that underpin the differentiated instruction framework. Additionally, time constraints and feelings of failure in implementing differentiation strategies impacted teacher attitudes. Teacher knowledge, attitude and self-efficacy were interrelated and impacted on teachers’ implementation of differentiated instruction in the senior secondary classroom. Implications for professional development to address student needs through differentiated instruction in the inclusive senior secondary classroom teacher are discussed.**

## Introduction

Differentiated instruction (DI) is a philosophy and praxis for effective teaching. It is robust teaching that is not just a discrete set of teaching strategies. Rather, it is a system

comprised of interdependent elements, such as learning environment, assessment, instruction, curriculum and classroom leadership (Tomlinson and Moon, 2013). This proactive approach to teaching and learning is rooted in assessment and provides multiple approaches to content, process and product (Tomlinson, 2017). According to Smit and Humpert (2012), these multiple approaches allow teachers to cope with the diversity in their classrooms and strategically meet their students’ needs, leading to inclusive education.

In the classroom, DI addresses student diversity by allowing teachers to anticipate their diverse learners’ needs and adapt their instruction to meet them (Griful-Freixenet, Vantieghem, Gheysens, et al., 2020). Research has typically focused on self-efficacy, teachers’ beliefs in their ability to apply effective teaching practices to diverse classrooms (Monteiro, Kuok, Correia, et al., 2019; San Martin, Ramirez, Calvo, et al., 2021) and views towards students with learning difficulties (Woodcock and Faith, 2021) rather than DI specifically. Teacher attitudes and beliefs play a crucial role in the provision of DI (Knauder and Koschmieder, 2019; Letzel, Pozas, and Schneider, 2020). This study aimed to delve deeper into a framework that has existed for nearly two decades (Sun and Xiao, 2021) by analysing discourse on teachers’ attitudes and self-efficacy in a senior secondary setting. Teachers are required to utilise DI within their classrooms as part of the Australian Institute for Teaching and School Leadership [AITSL] (2017b) standards, which states that teachers must ‘demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities’ (AITSL, 2017a, para. 5). The AITSL standards govern quality teacher practice in Australia, and whilst teachers must demonstrate that they meet graduate and proficient levels of the standards to become registered teachers, there is no requirement to demonstrate the

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standards at higher levels. Similarly, whilst the Disability Discrimination Act (Commonwealth Government, 1992) and Disability Standards for Education (Commonwealth Government, 2005) require teachers to provide reasonable adjustments for students who meet the broad category of a disability, there is no specific outline for teachers to utilise DI in their teaching practices. Furthermore, as the Disability Discrimination Act and Disability Standards for Education do not mandate teachers to utilise DI, there may be competing views as to when DI is required to be implemented, further impacting teacher attitudes towards DI.

### Differentiated instruction framework

The factors of content, process and product are central elements of DI, that provide 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). Differentiation by affect and environment refers to classroom climate and emotions and how they impact student learning (Gibbs and Beamish, 2020; Gibbs and McKay, 2021). Tomlinson (2014) argued that teachers can differentiate the climate of the classroom in a variety of ways, such as including quiet spaces in the classroom, making students feel welcomed and valued and helping them recognise that the classroom is a safe space to learn where they will experience both successes and failures.

Differentiated instruction is often misconstrued by teachers, however, as a series of teaching strategies that allow teachers to create varied learning experiences (Tomlinson and Moon, 2013) or viewed as chaotic and ambitious (Tomlinson, 2013). This misconception may lead to the development of teacher attitude and self-efficacy being based on factors not considered encompassing DI principles. Smets and Struyven (2020) outlined three key areas that make implementing DI challenging: (i) teachers require knowledge of instructional strategies to succeed, (ii) teachers need the skills to assess and respond to learner diversity in their classrooms and (iii) teachers must have a positive attitude towards DI to engage with it. Not only is a positive attitude towards DI required, but De Neve, Devos, and Tuytens (2015), who investigated teacher self-efficacy and DI further outlined the need for higher self-efficacy in DI, stating that if teachers do not have a belief in their own ability their performance is lower, compared to a teacher with higher self-efficacy. It is, therefore, important to explore both teacher attitude towards and self-efficacy in DI as it appears they both place an important role in how effective teachers are in implementing DI.

### Self-efficacy and attitudes towards implementation of differentiation

Given that teacher attitude is an essential element of professional competence and thus a predictor of successful implementation of inclusive school systems (including

DI) (Börnert-Ringleb, Westphal, Zaruba, et al., 2020), it is crucial to investigate these attitudes in particular settings. The ABC model (Kast, Lindner, Gutschik, et al., 2021) developed by Eagly and Chaiken (1998) is one of the most cited models for defining attitudes. It divided attitude into three components: affective (A), behaviour (B) and cognitive (C). In this research context, the affective component refers to teachers’ attitudes towards DI, the behavioural component refers to teachers’ implementation of DI and the cognitive component relates to teachers’ self-efficacy about DI in a senior secondary school capacity. Using this model demonstrates how self-efficacy and attitudes are interconnected, given the affective nature of attitudes and cognitive disposition of self-efficacy.

Kast, Lindner, Gutschik, et al. (2021), who investigated teacher attitudes and self-efficacy during online learning in Austria, stated that self-efficacy and teachers’ attitudes are crucial determinants of success in implementing inclusive practices, including DI. Kast, Lindner, Gutschik, et al. (2021) attributed a negative attitude towards students with diverse language needs to the fact that negative teachers did not feel self-efficacious enough to teach these students. This suggests that attitude and self-efficacy may affect each other in various ways; however, the study acknowledged that their sample was underrepresented and therefore, may not accurately represent senior secondary teachers’ views. Similarly, this study was conducted in Austria and thus, does not reflect the Australian context. Savolainen, Malinen, and Schwab (2020), who conducted a longitudinal study of teacher self-efficacy in Finnish schools, observed that self-efficacy influences teachers’ attitudes, as teachers with a greater sense of self-efficacy develop a more positive attitude towards students with diverse needs. In contrast, research by Bruggink, Goei, and Koot (2016) who surveyed Dutch primary teachers found that self-efficacy was not an indicator for self-perceived capacity to meet the diverse learning needs of students. This study, however, was completed with primary school teachers and thus, senior secondary school teachers may therefore value DI and perceive the level of consequences attached to DI differently than primary school teachers.

Kamarulzaman, Azman, and Zahidi (2018), who conducted a literature review of DI practices, found that even though teachers’ attitudes did not influence DI use, self-efficacy alone motivated them to implement DI. Similarly, Moosa and Shareefa (2019) found in their quantitative study that teachers who were more experienced, with regard to the years they had been teaching, had stronger self-efficacy beliefs towards DI, compared to less experienced teachers. Pozas, Letzel, and Schneider (2019) further stated that positive beliefs in DI positively influenced teachers use of DI practices. This study, however, was conducted in Germany and does not reflect how Australian teachers’ beliefs are shaped, highlighting

the need to investigate the Australian landscape. Letzel, Pozas, and Schneider (2020) conducted a quantitative study using an attitude scale to assess attitudes towards DI in Germany and found that secondary school teachers who valued DI were more inclined to implement DI. However, Herbert, Kallou, Kitsingh, et al. (2018) and Shareefa (2021) found in their studies that pedagogical choices and preparation time were indicators for a positive attitude towards DI, with Shareefa (2021) stating that the use of DI helped to bring about positive attitudes to teachers. Therefore, there is an unclear link between the combined effect of both attitude and self-efficacy on DI use and further investigation is warranted, particularly in Australia.

This study explored the following research questions:

- What patterns of discourse emerged in teachers' descriptions of their use of DI in a senior secondary context?
- How are senior secondary teachers' self-efficacy and attitudes, relating to DI, constructed?

### Significance of the study

Considering the essential role, teacher attitudes and beliefs may have on the use of DI and the paucity of research in the senior secondary context in Australia, particularly through a discourse analysis, understanding teacher attitudes and self-efficacy could improve the ways teachers are educated about DI. This improved education may include ways which could lead to a more positive attitude towards DI and increased self-efficacy in using the pedagogical tools and strategies that the DI framework encompasses. Teachers not utilising inclusive frameworks such as DI, or not utilising DI as effectively as they could, raises the question of how equitable and inclusive their classrooms are. A greater knowledge of what desirable attitudes of teachers are needed, and levels of self-efficacy in senior secondary schools may allow for more effective approaches to professional development, resulting in more inclusive practices and greater student success, particularly for those with diverse learning needs.

### Methodology

To investigate senior secondary teachers' attitudes towards differentiation and their self-efficacy in the implementation of differentiation strategies, a case study methodology was employed (Cohen, Manion, and Morrison, 2017; Stake, 2013). This paper reports on one part of the larger case study. Semi-structured interviews were conducted with five senior secondary teachers and discourse analysis was employed on the transcripts. An audit trail, which, according to Lincoln and Guba (1985) supports the trustworthiness of a study, was undertaken through a reflexive analysis of decisions and choices made when coding and identifying I-statements. To increase the trustworthiness of the data, member checking

of interview transcripts (Merriam, 1998) was employed, allowing participants to confirm the transcript or revise it.

### Data collection

#### *Research site and participants*

The research was conducted with five senior secondary teachers from two independent schools in Australia – situated in Brisbane, Queensland, and in Adelaide, South Australia. The Brisbane school encompasses Prep to Year 12 and currently offers the Queensland Certificate of Education (QCE) curriculum in the senior secondary years. The school in Adelaide encompasses Reception to Year 12 and offers the South Australian Certificate of Education (SACE) curriculum from Years 10 to 12. It is important to note that whilst the QCE and SACE govern what is taught in the respective states, the Australian Curriculum F-10 also governs Year 10, which is considered a senior secondary year or transition to senior schooling years.

Two types of sampling were utilised to gather participants for this study. Participants were recruited either through a purposive sampling technique or through snowball sampling (Cohen, Manion, and Morrison, 2017). The lead researcher emailed a member of the schools' leadership team to inform them of the current study and to ascertain if any of their staff would be willing to partake in the study. In other instances, the existing participants encouraged others who met the criteria, namely senior secondary teachers, to participate. Snowball sampling allowed the researcher to go beyond their social networks and recruit teachers from other schools, such as those from the Brisbane school, who may be considered hard to reach (Cohen, Manion, and Morrison, 2017) which was particularly pertinent as the data were collected during the restrictions of the COVID-19 pandemic. Purposive sampling ensured that the researcher recruited a wide variety of participants who taught a range of senior secondary subjects, taught at different senior secondary year levels and used different curriculum syllabi (e.g., QCE or SACE). The length of time teaching varied across the participants from 5 years to more than 20 years and they taught English, Science, Mathematics and Humanities subjects. Participants were asked nine interview questions which included but were not limited to: Why do you choose to, or not to utilise differentiated instruction in your senior secondary classrooms? What are the positive and negative aspects associated with implementing differentiated instruction?

### Data analysis

Qualitative data were analysed using the criteria for a reflexive thematic analysis by Braun and Clarke (2021) and informed by the method of discourse analysis outlined by Gee (2014), which uses I-statements. A thematic analysis was not the focus of this study, but it was used

to generate themes through which the researcher could explore when undertaking the discourse analysis.

Discourse analysis was used as the primary method for analysing the thematic data. Discourse forms one's truths and norms (Niesche and Gowlett, 2015) and as such allows for the exploration of teachers' attitudes and beliefs towards DI in their classroom and school context (Guerrero and Torres-Olave, 2021). Discourse analysis allowed the researcher to understand how teachers construct DI socially and the factors that affect this construction. I-statement analysis, which is particularly useful in analysing large amounts of qualitative data and examining patterns of discourse, was used for discursive analysis that examined and classified the first-person language found in speech (Gee, 2014). I-Statements can be categorised based on the type of predicate that follows the subject 'I' to determine people's feelings and actions and how they construct their identities through language (Gee, 2014). Data were grouped into five I-statement categories based on I-statement analysis by Gee, Allen, and Clinton (2001): (i) cognitive statements, (ii) affective statements, (iii) state and action statements, (iv) ability and constraint statements and (v) achievement statements. According to Gee, Allen, and Clinton (2001), cognitive statements are about thinking and knowing; affective statements are those regarding liking and desiring; state and action statements describe the actions of the speaker; ability and constraint statement are about being able or having to do things and achievement standards detail accomplishments of the speaker.

## Results

The results showed that cognitive statements were the statements most frequently made by teachers during the interview. This was followed by state and action statements and affective statements, respectively. No achievement statements or ability and constraint statements were recorded. The frequency of different categories of I-statements and an example of each category are shown in Table 1. The results for each I-statement category are outlined below, whilst key findings from the results have been used to guide the discussion.

### *Cognitive statement indicators*

Cognitive statements indicated that the teachers spoke more about their knowledge of DI in a curriculum context than about their ability to implement the framework. Amber stated that 'I think because you [have], for instance, a range of students... when you're explaining things differently or you give people different activities to do, it makes the classroom more interesting. People are doing different things, or they are accessing things in a different way'. Similarly, Jennifer stated 'I think what is meant from it in a way that people can understand of differentiated instruction is when the learning information and process is shared with students in different ways'. In

**Table 1: Categories of I-statement Analysis of Interview Data**

Category	Example	Frequency (number of times)
Cognitive statements	'I think when you are walking around the classroom, you want to hear on-topic discussion not off-topic discussion'	28
Affective statements	'I'm in the middle. I'm fairly confident in using it, but I would like to use it better'	2
State and action statements	'I do a fair bit of formative quizzing, so the kids get a chance to have a go at it, and it's something I've worked on a lot so that they know it's not about making us feel bad, it's about so we see what we know'	12
Ability and constraint statements	No example	0
Achievement statements	No example	0

contrast, cognitive statements which lead to a discussion of the advantages and disadvantages of utilising DI indicated how teachers' self-efficacy and attitudes were constructed. For example, Elizabeth felt that she had a lack of practical examples to guide her implementation of DI. She also reflected, 'I do not think I actually do it well. So, I'm still in that headspace of I don't – I actually don't think I do it very well at all'. Elizabeth also felt frustrated when unsuccessfully implementing a common DI strategy: 'I have had experience of failure with mixed groupings. I've just realised it just doesn't work'. Her cognitive statement implies that teachers may develop less self-efficacy towards DI practices if they have been unable to effectively implement it and see its perceived benefits. Elizabeth further suggested that she may have a comprehensive knowledge of mixed-ability groupings but a lack of skill in how to implement them: 'I don't feel like I do it, and then, I still feel very – I have no confidence in what I'm doing'. She continued by recounting that she stopped a DI strategy she felt was 'out of control'. Her comments show the importance of teachers learning not only DI theory but also mastery in the practice of DI. This need for mastery is true for Jennifer. She is confident teaching DI, she claimed, 'because I do it every day – because I keep on practicing it because it's not something that I'm pulling out once or twice. The teachers that I'm working with who aren't feeling as confident – for me, it's because they're not doing it regularly'. The lack of confidence due to irregularity in DI use may hold true

to a perception that DI is time consuming, as Elizabeth noted in this cognitive statement that ‘I think it’s actually a time factor. . .to cover the massive amount of content in a very short period of time’. These findings suggest that when teachers look beyond the negatives of lack of time, as well as the challenge of implementing DI in the beginning, that teacher confidence does increase. For instance, Linda stated ‘I think I’m pretty confident using most of these things [DI strategies] these days, and I think it’s also really important that the students understand why we’re doing these things’, acknowledging that DI was challenging in the beginning as ‘you’re trying to figure out how to balance a lesson and make it work’.

#### *State and action statement indicators*

The teachers used state and action statements to provide examples of how they implemented DI, particularly when justifying their use of DI. For instance, Linda indicated that she used data gathering to determine the level of her students: ‘I do a fair bit of formative quizzing, so the kids get a chance to have a go at it, and it’s something I’ve worked on a lot so that they know it’s not about making [the students] feel bad. It’s about so we see what [the students] know’. Likewise, Amber highlighted her use of the RAFT (Role, Audience, Format and Topic) graphic organiser – a key teaching method within the DI framework to assist students in understanding their roles as writers – increased her confidence in DI when using the framework. This confidence may be attributed to the fact that a RAFT is useful in writing-based subjects, such as English and Humanities, which are key teaching areas for Amber. This confidence may be because of the familiarity of RAFTs in her subject area. However, Amber felt that DI was initially overly stressful. She stated, ‘sometimes it can be really overwhelming when you get a student who might be [a] selective mute. Or who might be blind’. Whilst Amber indicated that she utilises DI to increase student motivation, the fact that she was overwhelmed suggests she may view DI as a strategy for individual students rather than for a whole cohort, particularly those with diverse learning needs. Furthermore, she may feel overwhelmed due to the nature of trying a new DI strategy, as she indicated that DI felt easier, and she felt more confident over time. Difficulties with DI may arise from a focus on the implementation of the framework. Elizabeth indicated through a state and action statement that the only reason she would not utilise DI was that she found it difficult, indicating that greater use of DI practices may occur when DI practices become less difficult and greater familiarity in strategies is gained.

#### *Affective statement indicators*

Sally and Jennifer both used affective statements, directly indicating their feelings concerning DI, such as a sense of joy when differentiating. For example, Jennifer stated that when she engages in DI, ‘I certainly get some of that buzz of knowing that students have been successful and having them feel so positive about the learning

experience with me’. Sally mentioned that whilst she uses DI with relative confidence, ‘I would like to use it better. I know that I do have it. But I don’t do it consistently enough. I don’t always know the theory. I like to know the theory behind what I’m doing’. Her comment suggests that Sally knows what DI is and the strategies involved, but she desires to develop further theoretical knowledge, thus, more theoretical knowledge of DI may lead to more efficacious teachers. Despite some participants being overwhelmed, others felt that DI was important to student success. Both Sally and Linda indicated the need to create equitable access for their students and cover all student levels within the classroom. Similarly, Jennifer went into more detail, explaining her desire in wanting to use DI to take a student-centric approach stating, ‘because I want my students to be successful, it matters to me so much that they achieve success and that they can do well, and that’s my whole motivation is student centric’.

Analysis of the discourse teachers used, through cognitive, state and action, and affective statements demonstrated two key findings. First, the teachers indicated a deeper knowledge of teaching strategies related to DI than the concepts that underpin the framework. Second, results indicated that frustration towards DI implementation was reported by the participants, specifically the lack of time in which to implement DI and failure in implementing DI strategies effectively may be contributing factors for a negative attitude towards DI. The significance of these two key findings will be explored further in the discussion.

#### **Discussion**

Teacher attitudes and self-efficacy were the focus of the study, but it was found, in addition to those two factors, that participant statements that related to teacher knowledge were prominent. The results indicated two key findings from the I-statement analysis categories. It was found that the teachers had a deep understanding of DI, particularly DI strategies, but in some cases, this knowledge did not liken to their perception of successful DI implementation in their classrooms. This reflects that the teachers know what DI is and they know how to do it well; however, some of them may need help in implementing what they know, to be able to increase student outcomes in a senior secondary context. In contrast, results indicated that teachers experience frustrations towards DI, which may lead to a negative attitude towards using DI practices in their classrooms. The two key findings are discussed below.

First, teachers were found to have a deeper knowledge of DI strategies compared to the knowledge of the concepts of DI, and in some instances, DI knowledge did not equate with teachers’ reported DI implementation. A higher frequency of cognitive and state and action statements can indicate a more superficial understanding of DI

and its impact on students because DI is much more than equity and meeting students' needs. Godor (2021) argued that teachers who have a better cognitive understanding of DI are those that have a deeper understanding of the concepts of DI, forming their own DI strategies that consider their teaching preferences. Therefore, discussing what DI is, which the teachers tended to do, rather than the concepts of DI could be seen as a superficial understanding. This was surprising as participants were asked to describe assessment strategies, which form part of the ongoing assessment guiding principle in the DI framework by Tomlinson (2014), and not asked to describe DI.

Whilst understanding that DI creates equitable and inclusive classrooms is important, on which participants tended to elaborate, they were also asked about the indicators for student success in the classroom. Nonetheless, they did not comment extensively on the effectiveness of DI and its impact on students. They just stated that they knew DI created equity in the classroom. This was particularly so for Linda who said, 'it's about equity and access for the girls'. This, perhaps, reflects a superficial understanding of DI and the importance it has on student outcomes. That the use of cognitive and state and action statements reflects a shallow understanding of DI is supported by van Geel, Keuning, Frèrejean, et al. (2019), who contended that DI also involves knowing the pedagogical needs of students, relationships, student interests and motivations and how to address them. Gaining this knowledge involves analysing students' work to gain further insight into the students.

The cognitive I-statements in the present study also showed that teachers were more interested in expressing their knowledge of DI, rather than their feelings about it, the constraints it causes them and their achievements with it. This preference could indicate that these teachers' self-efficacy is based on their knowledge of DI, rather than their successes or failures with DI implementation. All teachers, however, indicated they had a good understanding of DI strategies, including Elizabeth who struggled with the practice of DI, although she had a desire to learn more about DI. Supporting this, Elizabeth stated 'I actually need a physical concrete example of DI for me to go right, okay, I get that now'. This contradicts the findings by Letzel, Pozas, and Schneider (2020) who found that German secondary school teachers who valued DI were more inclined to implement DI. Elizabeth indicated that she values DI because she desires to learn more about it; however, her barrier to DI implementation appeared to be a sense of a lack of practical mastery. Therefore, it may not be just valuing DI that leads teachers to implement DI, but a sense of practical mastery too. Hence, it cannot be assumed that good understanding of DI equates to effective implementation of DI practices in the classroom.

Professional development in ways teacher knowledge of DI can be transferred into practice, could likely lead to

the implementation of inclusive practices and improved student outcomes. Whilst the importance of practical mastery in DI as a means to develop greater knowledge of DI has been acknowledged by Porta and Todd (2022), this research extends this notion that practical mastery is also needed for a greater sense of self-efficacy to be developed. Hence, school leadership teams need to encourage senior secondary teachers to utilise DI, but most importantly, continue to support and encourage teachers to develop practical mastery of DI strategies even if at first, the teachers feel as if they are failing at implementing DI. Second, feelings of frustration around the practical implementation of DI, which were expressed by participants, may contribute to a negative attitude towards DI. Practical application of DI is particularly important, as it cannot be assumed that one acquires a mastery of DI innately throughout one's teaching career, given that Elizabeth has taught for 20 years, as has Jennifer, and they hold differing levels of self-efficacy. Goddard and Kim (2018) confirm the importance of such practical application, asserting that mastery was the most influential factor in shaping teacher self-efficacy amongst both early career and experienced teachers. Experienced teachers who lack self-efficacy with DI may thereby benefit from being mentored by teachers who differentiate well. This is supported by De Neve, Devos, and Tuytens (2015) who found that beginning primary teachers were more likely to try a range of DI strategies, even if they failed at them, suggesting that experienced teachers with lower self-efficacy, may be less inclined to attempt implementation of differing DI strategies. These findings are comparably different to that of Moosa and Shareefa (2019) who found that for elementary school teachers, more experienced teachers generally had higher self-efficacy beliefs towards DI, than less experienced teachers. An implication from this finding calls for leadership teams in schools to find ways to support experienced teachers in continuing to develop their knowledge and application in DI as a way to develop confidence in one's ability to implement DI. Whilst previous research has often focused on primary teachers (De Neve, Devos, and Tuytens, 2015; Moosa and Shareefa, 2019), this study has highlighted the self-efficacy and attitudes of senior secondary teachers. Further investigation, however, is required on secondary teachers as this study has shown some differences in self-efficacy beliefs compared to their primary counterparts.

It is likely that a sense of failure towards DI and a lack of time to implement DI strategies may lead to negative attitudes towards DI. Whilst only some teachers indicated their frustration with DI, their frustration indicates that they may be less likely to employ DI practices. Elizabeth outlined a frustration towards the DI strategy of mixed-ability groupings, whilst having good knowledge of how mixed-ability grouping works; however, this strategy is commonly regarded as a simpler practice to carry out (Pozas, Letzel, and Schneider, 2019). Therefore, it cannot

be assumed that knowledge of simpler DI practices will lead to a successful implementation of said DI strategies for all teachers. Research by Herbert, Kalloo, Kitsingh, et al. (2018) and Shareefa (2021) confirmed that pedagogical choices are not only shaped by teachers' attitudes but also by planning and preparation time, suggesting that Elizabeth may have a negative attitude towards DI because she does not have the time to implement DI practices. Further, Shareefa (2021) found that the use of DI helped to bring about positive attitudes for teachers; thus, Elizabeth's lack of time to implement DI may result in her using it less, further developing a negative attitude towards it. There is a need to provide opportunities for teachers to practice DI regularly, particularly through practical mastery. If teachers are frustrated by DI or feel constrained by time, they may be less likely to employ DI strategies and may hold a negative attitude towards DI, though there is a need to explore this further. Professional development on practical support of how to implement DI effectively may lead to greater practical mastery and positive attitudes towards DI.

Overall, the results indicate that these teachers know what DI is, have a good understanding of the various strategies that are encompassed within the DI framework, and many of the teachers know how to do it well. There is a need, however, to help teachers such as Elizabeth, who possess a lower sense of self-efficacy towards DI to implement DI effectively. This may be due to the fact that negative beliefs in DI may negatively influence teachers' use of DI, which adds to the existing knowledge by Pozas, Letzel, and Schneider (2019) who found that positive beliefs in DI positively influenced teachers' use of DI practices. This requires further investigation. That being said, this research highlights the need for DI to be taught to teachers in a practical way that minimises frustration, whilst allowing teachers to not feel that they are losing time in implementing DI in their senior secondary classrooms. A lack of time and a sense of failure were the main factors preventing teachers from applying DI. These findings allowed for a deeper understanding of how teacher self-efficacy towards DI may be shaped by the practical implementation of DI practices. Whilst the importance of professional development in DI has already been established in Australian secondary schools (Sharp, Jarvis, and McMillan, 2018), the findings from this study build further into the ways that professional development in DI can be taught and further supported, allowing for greater use of inclusive practices in senior secondary contexts.

### Limitations and future research

Qualitative research is subjective in nature, and a limitation of subjectivity is that there are multiple ways of defining discourse. To minimise the potential bias associated with subjectivity, Tomlinson's (2014) theoretical framework of differentiated instruction was paired with a social constructionist paradigm to clearly identify the researchers' position in the study. Furthermore, the risk of

bias was mitigated through reflexivity, with the researcher keeping a journal of decisions made towards data analysis. A limitation of this study is that discourse analysis may be insufficient to fully understand and explain teachers' attitudes and self-efficacy. Further research on a larger scale is necessary for this study's findings to be generalised to the wider senior school teacher population. A larger sample could include teachers from other Australian states and territories. Future research should also explore the impact of teachers' attitudes and self-efficacy on their colleagues, specifically whether they influence colleagues' attitudes, self-efficacy and use of DI and/or other inclusive practices.

### Conclusion

This study served as a gateway for determining the self-efficacy and attitudes of senior secondary school teachers across two Australian states who use DI. It appears that patterns in the discourse of teachers' knowledge and use of DI are indicators for the confidence they feel, and the attitude they develop. A deeper sense of self-efficacy may be tied to a deeper knowledge of DI strategies, whilst a lower sense of self-efficacy may develop from a sense of failure with implementing specific DI strategies and a lack of practical mastery in DI. This calls schools and leadership teams to not only educate teachers about DI, but also allow them the time to implement DI and be supported to adjust the way they differentiate when and if they fail. Positive attitudes towards DI may be born from this increased confidence in implementing DI strategies, as well as through understanding the student-centric nature of DI. Negative attitudes may be developed from frustration or a feeling of time constraints to action DI. Understanding teacher frustrations may lead to ways these can be minimised, allowing teachers to feel implementing DI is achievable and enjoyable. This study furthers knowledge on existing research regarding the importance of professional development in developing teacher understanding of the philosophy of DI and practical ways it can be implemented. Similarly, this study confirms the need for teachers who have a lower sense of self-efficacy or experience failure in implementing DI, to be guided to practically implement DI, by more confident and well-equipped teachers who utilise it well and will provide an encouraging environment where teachers feel it is acceptable to fail, but to try again to successfully implement DI. It is crucial that teachers regularly engage with DI, allowing them to build confidence in teaching with differentiation in mind, leading to more inclusive practices and improvement in student outcomes.

### Geolocation information

Data were collected in Adelaide and Brisbane, Australia.

### Conflict of interest

The author has no financial interest (or other potential benefits) which will follow from the direct applications of the research.

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### Ethical approval

Ethical approval was granted on 19 May 2021 by the University of Southern Queensland's ethics committee.

### Data availability statement

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data are available upon reasonable request.

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