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PREPARING TEACHERS TO INSTRUCT STUDENTS WITH AUTISM IN
INCLUSIVE SETTINGS: AUSTRALIAN PRE-SERVICE TEACHERS' AND
RECENT GRADUATES' PERSPECTIVES - AN EXPLORATORY CASE
STUDY

A thesis submitted by

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Abstract

This exploratory case study explores pre-service teachers'(PSTs') and recent teacher graduates' (RGs') self-efficacy beliefs and preparedness in teaching students with ASD in inclusive classrooms at an Australian regional university. The conceptual foundations were based on the concept of self-efficacy. Bandura (1977) defines self-efficacy as an individual's belief in their capabilities to complete a task despite adverse circumstances. Using a social constructivist framework, participants' perspectives to teach students with ASD were explored using the following research questions:

(1) What were the pre-service teachers' and the recent teacher graduates' views about the inclusion of students with ASD within inclusive classrooms?

(2) What were the pre-service teachers' and the recent teacher graduates' self-efficacy beliefs and preparedness in educating students with ASD, and what were the factors leading to their self-efficacy and preparedness within inclusive classrooms?

(3) What were the participating pre-service teachers' and recent teacher graduates' teacher education experiences, and what are the ways to improve their skills and knowledge in teaching students with ASD within inclusive classrooms?

Purposive sampling was used to recruit pre-service teachers (PSTs) (n=8) and recent teacher graduates (RGs) (n=8) to provide insights into their perceptions of teaching students with ASD. Participants' interviews were audio recorded and transcribed, and the resulting data were analysed using *NVivo 12* software, QSR International. Deductive and inductive analysis revealed that although participants understood inclusion and their impacts on students' success, they appeared to have limited ASD-specific teaching strategies and use of evidence-based practices. Consequently, the study ascertained that teacher participants were not able to offer optimal support to students when placed within inclusive classrooms — barriers of inclusion included challenging behaviours, lack of funding, large class sizes, and

time constraints. The critical insights drawn from data were teacher stress and job satisfaction leading to unsuccessful inclusion.

This study reveals that participants' self-efficacy beliefs and preparedness improved through extensive classroom experience, years of teaching and exposure to individuals with ASD. The findings are likely to make contributions towards theoretical, methodological, educational policy, and practice knowledge. It adds value to Bandura's self-efficacy model. Bandura's focus on self-efficacy was primarily individual; however, this study demonstrates a different form of self-efficacy, centered on 'collective self-efficacy' where teacher participants shared views in teaching students with ASD in inclusive classrooms is captured. Moreover, teachers' collective self-efficacy can be characterised by their supportive administrations, colleagues, parents, experts (e.g., psychologists), and educational authorities and policy-makers.

This study contributes to methodological knowledge considering that no previous study identified in Australia had used a qualitative exploratory case study approach of collecting data on teachers' perceptions on self-efficacy and preparedness in teaching students with ASD. Accordingly, it is expected to generate insights and avenues for research on the phenomenon of teaching students with ASD. This will contribute to educational policy and practice such as improving current educational policy, planning, and new reform initiatives. Additionally, the findings act as a significant step for educational stakeholders to modify curriculum regularly, and to promote more effective professional development initiatives to prepare efficacious teachers who deal with such students.

Certification of Thesis

This Thesis is entirely the work of Aruna Devi except where otherwise acknowledged. The work is original and has not previously been submitted for any other award, except where acknowledged.

Principal Supervisor: Dr Rahul Ganguly

Associate Supervisor: Professor Patrick Danaher

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

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Abbreviations

AAAA	Autism Aspergers Advocacy Australia
ABS	Australian Bureau of Statistics
ACARA	Australian Curriculum, Assessment and Reporting Authority
ASD	Autism Spectrum Disorder
CDC	Center for Disease Control in the United States
COAG	Council of Australian Governments
DDA	Disability Discrimination Act in Australia
DSE	Disability Standards for Education in Australia
EAP	Education Adjustment Plan
EBPs	Evidence-Based Practices
IEP	Individual Education Plan
NDS	National Disability Strategy in Australia
PD	Professional Development
PSTs	Pre-service Teachers
PS	Pre-service
RGs	Recent Graduates
SDAC	Survey of Disability, Ageing and Carers
TSES	Teacher Self Efficacy Scale
UNESCO	United Nations Educational, Scientific and Cultural Organization
UN	United Nations
SCT	Social Cognitive Theory

Chapter 1 Introduction

1.1 Background of the research study

In Australia, the educational needs of students with Autism Spectrum Disorder (ASD) are safeguarded by legislation, such as the Disability Discrimination Act 1992 (DDA) and the Disability Standards for Education 2005 (DSE). These measures provide the provision of equitable educational opportunities for all students irrespective of their learning abilities. Consequently, schools are moving towards inclusive practices, so it becomes vital that we investigate and recognise teachers' perspectives on their self-efficacy, preparedness, and experiences in teaching such students within their classrooms.

According to 2012 data provided by the Australian Bureau of Statistics (ABS) (2017), the prevalence of ASD conditions has increased. The updated American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5), implemented in 2013, proposed several changes to the criteria that are used for the diagnosis of ASD conditions, including, but not limited to, probing questions that appeared to recognise ASD more accurately. As a result, a larger proportion of individuals are diagnosed with ASD nowadays. Indeed, these updated statistics showed that, in the year 2015, there were 164,000 Australians diagnosed with autism, and that this number comprised a significant (~42.1%) rise from that recorded in 2012. The apparent increase in individuals diagnosed with ASD conditions appeared to be relatively similar to the 2010 data from the United States of America. The data sourced from the Center for Disease Control and Prevention (CDC) (USA), for example, registered that, on average, at least 1 out of 68 school children had an ASD-related condition (Centers for Disease Control and Prevention, 2016). Taken together, the statistics obtained in both Australia and the USA pointed out a greater need for the identification and recognition of children with ASD conditions.

There is a shift in inclusive education and an increase in the number of students diagnosed with ASD who are receiving education in inclusive classrooms (Soto-Chodiman, Pooley, Cohen, & Taylor, 2012). Therefore teachers who are not adequately trained therefore less prepared, face significant challenges in

accommodating these students within their classrooms. Although there have been no previous studies conducted in Australia that specifically focused on teacher perception on their preparedness and self-efficacy in teaching students with ASD, studies elsewhere have demonstrated that regular teachers feel ill-prepared to teach students with ASD (Finch, Watson, MacGregor, & Precise, 2013; Scheuermann, Webber, Boutot, & Goodwin, 2003). Consequently, a lack of teacher preparedness can influence teacher self-efficacy (Lastrapes & Negishi, 2012; Leblanc, Richardson, & Burns, 2009; Swackhamer, Koellner, Basile, & Kimbrough, 2009), which in turn can have an impact on teacher job satisfaction, and consequently higher teacher attrition rates. In Australia, early career teachers' attrition rates are high with an estimated 30–50% of teachers leaving their teaching profession within their first five years of teaching service (Arnup & Bowles, 2016; Bennett, Newman, Kay-Lambkin, & Hazel, 2016; Brennan, 2016; Manuel & Carter, 2016; McKinnon & Walker, 2016; Stroud, 2017; Vukovic, 2015). Early career teachers can be more vulnerable to attrition if they feel ill-prepared and lack the required degree of confidence in teaching, coupled with all the challenges they face in their classrooms.

Additionally, studies conducted elsewhere show that teachers with inadequate training have lower self-efficacy beliefs in teaching students with ASD, and they therefore have high levels of burnout (Jennett, Harris, & Mesibov, 2003). The American Psychiatric Association (2013), describes the features of ASD in its updated 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as deficits in social communications and interactions, and restricted and repetitive behaviours, interests, and activities. Hence, given that students with ASD are likely to portray such complex characteristics, teaching these types of students can be rather challenging and stressful if their teachers feel they lack the specific knowledge and teaching strategies to accommodate these students within inclusive classrooms. As a result, students with ASD conditions may receive an unfair judgement, and hence not be ideally supported in their learning process or appreciated by teachers, peers and broader community members (Amaze Position Statement, 2018). The Amaze Position Statement (2018) states that "autistic students should have access to an education system that provides an inclusive culture and a multi-faceted, individualised, needs-based approach that is tailored to their strengths and unique learning styles" (p. 1). One interpretation of this proposition is that the

qualified teachers can be the primary contributors towards implementing inclusive learning environments for students with ASD, and it is therefore important to explore teachers' views about the inclusion of students with ASD, their concerns, and their self-efficacy capabilities and preparedness to generate positive learning outcomes for these students.

By reviewing key literature, as presented in greater detail in Chapter 2, it has become clear that the majority of graduate teachers generally receive minimal, and even no direct, skill development targeted at students with ASD during their teacher preparation programs (Hart & Malian, 2013; Morrier, Hess, & Heflin, 2011). Hence, inadequate teacher education has been recognised as a primary barrier hindering the promotion of effective and inclusive educational practices (Brown, Packer, & Passmore, 2013), and this issue is likely to affect teachers' self-efficacy beliefs and preparedness in teaching students with ASD in inclusive classrooms. This is because self-efficacy, or teaching confidence, as it is commonly known, is an enabling psychological model that leads to the demonstration of optimistic self-belief and competence in accomplishing a task and producing a favorable outcome (Bandura, 1997). In the context of teaching students with ASD, self-efficacy can be a guiding power to implement innovative practices that support students. The Australian Senate committee members, e.g. Lines, McKenzie, Ludwig, O'Neill, Peris, and Reynolds (2016) reported that issues on lack of awareness in teaching students with disabilities are best addressed "by adding to or improving teacher training on disability-related issues" (p. 28). This doctoral thesis is a step forward in exploring and addressing potential issues faced by pre-service teachers (PSTs) and recent graduates (RGs) who work with students with ASD in inclusive classrooms, with a focus on the Australian context.

This doctoral thesis is primarily focused on PSTs' and RGs' perceptions on their self-efficacy beliefs and preparedness required to instruct students identified with ASD conditions in inclusive classrooms. All teachers who are equipped with the right knowledge and skills are expected to have more positive self-beliefs as part of their self-efficacy, while the teachers with a limited knowledge base are likely to demonstrate a degree of doubt on their self-efficacy beliefs. Consequently, a strong sense of self-efficacy and the nature of teacher education programs are both likely to

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have a powerful influence on teachers' performance in real workplace environments (Pendergast, Garvis, & Keogh, 2011). Furthermore, effective teaching practices within an inclusive classroom can depend significantly on teachers' beliefs about their abilities and their accountability for children with special needs (Jordan, Schwartz, & McGhie-Richmond, 2009), including those with ASD.

The proposed doctoral study addresses the identified lack of Australian-based research and gaps in teachers' perceptions on their ability to teach students with ASD in inclusive classrooms. This study explores this phenomenon more closely and seeks to produce firsthand information required to allocate additional support services for individuals with ASD within an educational system.

The following sub-sections of this chapter discuss briefly the history and relevant legislation and policy related to the inclusion of students with ASD in inclusive classrooms. The key reasons for conducting this doctoral research study are followed by the study's research questions, after which a brief account of the research methodology is presented, followed by a discussion on the study's importance. The chapter concludes by discussing the biographically situated researcher and the layout of the structure of this thesis.

1.2 Definition of inclusive education

The terminology "inclusion", has been used extensively, with mixed interpretations and many definitions of inclusive education having been merged (Artiles, Kozleski, Dorn, & Christensen, 2006). Thus, the concept of inclusion is very complex and difficult to define, with contrasting meanings in different countries (Waitoller & Artiles, 2013). In Australia, "there is no one overarching definition to guide the inclusive education agenda" (Anderson & Boyle, 2015, p.7). In the Australian context, Forlin, Chambers, Loreman, Deppeler, & Sharma (2013), have attempted to define inclusive education with caution: "attempts to define inclusive education by what it is, however, are problematic because such definitions can be impacted by shifts in educational practice, context, culture, and circumstance that can quickly render these features irrelevant and outdated" (p. 8).

According to Australian reseachers Graham and Spandagous (2011), understandings of inclusion are often tied up with funding, which can have an

adverse effect on the implementation of inclusion. Furthermore, they stated that the "contextual characteristics of a school and its community inform discussions of diversity and define what inclusive education means in specific schools" (Graham & Spandagous, 2011, p. 225). In other words, the more culturally diverse the school is, the better the understanding of inclusive education is (Graham & Spandagou, 2011). The United Nations Educational, Scientific and Cultural Organisation [UNESCO], (1994) stated that inclusive education of students with disabilties consists of effective ways to solve disciminatory approaches towards these students. The Queensland Department of Education's (2018) inclusive education policy statement states:

> Inclusive education means that students can access and fully participate in learning, alongside their similar-aged peers, supported by reasonable adjustments and teaching strategies tailored to meet their individual needs. Inclusion is embedded in all aspects of school life, and is supported by culture, policies and everyday practices. (p. 1)

Inclusive education refers to the delivery of high-quality education for all students regardless of their background. Additionally, less attention has been given to how well these PSTs or RGs can define the term "inclusion," and consequently implement and apply EBPs to educate these students. There is no overarching definition for inclusive education (Anderson & Boyle, 2015). However, in Australia inclusion is not only practiced exclusively with reference to students with disabilities, but also provides "high-quality education to all students" (Anderson & Boyle, 2015, p. 5). Therefore, schools need to restructure their environment to suit the needs of all children regardless of their background.

Lack of understanding about what inclusvie education means can be a barrier to successful inclusion. Therefore, imposing a good definition of inclusion with clear expectations will help educators to implement inclusive settings successfully. The next section of this chapter biefly discusses the historical background of inclusion in Australian schools.

1.3 The history of inclusion in Australian schools

Historically, between the 1940s and the 1970s, the withdrawal of students with special needs from the general classroom was a popular way to satisfy their

educational needs (Forlin, 2006). In the 1970s, schools acknowledged the proposal of the Karmel Report (Karmel, 1973), which recommended that the Australian Government must integrate children with disabilities in regular classrooms (Forlin, 2006). However, at the World Conference on Special Education in Salamanca, Spain in 1994, a statement that supported inclusion as a normal approach to educating students with disabilities was approved (Foreman & Arthur-Kelly, 2008; United Nations Ministry of Educational Scientific and Cultural Organization [UNESCO], 1994). In response, Australia, together with a total of 90 other nations, came up with a position statement about inclusion, which stated that "regular schools with [an] inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all" (UNESCO, 1994, p. 9).

The United Nations (UN) (n.d) approved the Convention on the Rights of Persons with Disabilities, which aims to ensure that appropriate measures are taken to train professionals who work with individuals with disabilities at all levels of education. "Such training shall incorporate disability awareness and the use of appropriate augmentative and alternative modes, means and formats of communication, educational techniques and materials to support persons with disabilities" (p. 21). This framework was aimed at providing definite support for inclusive schooling systems (Foreman & Arthur-Kelly, 2008). By the end of 1981, every jurisdiction in Australia had a policy that promoted the acceptance of students with disabilities in regular classrooms (Forlin, 2006).

In the light of these historical developments, all states in Australia are now required to deliver high quality education, responding to and supporting the needs of disadvantaged students, safeguarding the school community from discrimination, and responding to family and societal requirements through community and cross-agency collaborations. In addition, educational institutions must also ensure that inclusive education processes are included in all state school policies and educational initiatives for students (Queensland Government, n.d). Thus, this movement to support inclusive education has clearly led to an increase in the number of students with special needs, including those with ASD, in general classrooms.

1.4 Legislation and policy

In Australia, the educational needs of students with ASD are safeguarded by appropriate legislation, such as the Disability Discrimination Act 1992 (DDA) and the Disability Standards for Education 2005 (DSE). These documents outline a need for equal learning opportunities for all students. That is, under the Disability Discrimination Act 1992 (DDA), it is unlawful to treat people with disabilities unequally. DSE 2005 summarised this agreement in more precise terms in the areas of "enrolment, participation, curriculum development, accreditation and delivery of support services and eliminating harassment and victimization" (p. 4).

In Australia, inclusive education is considered to be a policy rather than a law, and the educational policy of inclusion has been accepted in some form or other by all state and territory educational bodies (Jenkinson, 2001). In addition, there are several policy statements about inclusion across Australia at a national level (Jenkinson, 2001). These include for example the Melbourne Declaration on Educational Goals for Young Australians (2008), which stated that "all Australian governments and all school sectors must provide all students with access to high-quality schooling that is free from discrimination based on gender, language, sexual orientation, pregnancy, culture, ethnicity, religion, health or disability, socioeconomic background or geographic location" (p. 7).

The Council of Australian Governments (COAG) National Disability Strategy (NDS) for Australia 2020-2020 (2011) stated that "people with a disability achieve their full potential through their participation in an inclusive high-quality education system that is responsive to their needs. People with a disability have opportunities to continue learning throughout their lives" (COAG, 2011, p. 53). More recent statements by the Australian Curriculum, Assessment and Reporting Authority [ACARA] (n.d) have suggested a strong commitment to inclusive practices:

> ACARA is committed to the development of a high-quality curriculum for all
> Australian students, one that promotes excellence and equity in education. All
> students are entitled to rigorous, relevant and engaging learning programs

drawn from a challenging curriculum that addresses their individual learning

needs (para. 1).

All schools must ensure that their teachers are adequately trained to teach all students with disabilities, including those identified with ASD conditions. The Australian Advisory Board on Autism Spectrum Disorders (2010) further stated that an "increased provision of teacher education and training to improve the capacity of educational services to provide for students with an ASD" is required (p. 6). However, to date, there appears to be limited data available about teacher education, and more specifically, about students identified with ASD conditions, which forms the subject of this thesis.

1.5 The rationale for this research study

This doctoral thesis, presented as an exploratory case study, aimed to explore the pre-service teachers' (PSTs') and the recent graduates' (RGs') perceptions of their self-efficacy beliefs and preparedness in teaching students with ASD in inclusive classrooms. This research also aimed to explore the teachers' overall perceptions about the inclusion of students with ASD conditions, and about their teacher education experiences in preparation for teaching these students.

Given that there appear to be increasing numbers of students with ASD placed in regular classrooms, there is a sense of urgency to ensure that these students are taught appropriately within the spirit of inclusive settings (Coates, Lamb, Bartlett, & Datta, 2017). Moreover, three quarters of them were children aged between five and 24 years old, and four out of five children with autism had difficulties in schooling (Australian Bureau of Statistics [ABS], 2017). Furthermore, data from ABS reported that about 83.7% of students with ASD conditions in schools and in the higher education sector experience difficulties in their learning environments. Within those difficulties, about 63.0% had difficulty fitting in socially, about 60.2% faced learning difficulties, and about 51.1% encountered communication problems. As noted, the proportion of students with ASD conditions is one of the fastest growing disability categories in Australia.

This increase in the number of children with ASD in schools, and the challenges that they potentially face in classrooms, place significant pressure on educational authorities to ensure that their teachers are qualified enough to teach students with ASD effectively (Coates et al., 2017). It is important, therefore, to explore beginning teachers' foundational skills in teaching these students in inclusive settings, and providing equal learning opportunities for students with ASD so that they can learn together with their peers. Researchers in this field have also emphasised the need for prioritising teacher education when developing autism policies, and they suggest that, so far, the measures taken by the Australian State and Federal governments are somewhat discouraging, considering the increased rate of individuals with ASD conditions (Giangreco & Doyle, 2007; Hart & More, 2013).

Furthermore, the Australian Association of Special Education [AASE] (2018) has advocated for quality education for all children with special needs, and the provision of effective teaching with the implementation of evidence-based practices (EBPs) within inclusive settings. AASE also firmly supports the inclusion of a compulsory course about teaching students with disabilities and special needs within all PST education programs across all universities.

Despite this important shift towards inclusion in schools, research evidence shows that a significant number of teacher educators are still not prepared to educate students with ASD in inclusive classrooms, either socially, academically or behaviourally (Hinton, Sofronoff, & Sheffield, 2008; Horrocks, White, & Roberts, 2008). Therefore this shift towards inclusive practices has made it mandatory for universities to modify their teacher education programs so that these programs will ensure that PST education students have the knowledge, understanding and skills necessary to cater more effectively for the individual needs of students with ASD (Nougaret, Scruggs, & Mastropieri, 2005).

It is crucial then for all educational institutions in Australia to develop effective teachers who are responsible for educating students with ASD conditions. Previous research shows that carefully planned university academic and field-based coursework programs can improve PSTs' efficacy beliefs (Cantrell, Young, & Moore, 2003; Watters & Ginns, 2000). According to Brown et al. (2013), inadequate teacher preparedness has been recognised as a barrier to inclusive education.

Consequently, a strong sense of self-efficacy and the nature of teacher education programs are powerful influences on a teacher's performance (Pendergast et al., 2011).

1.6 The research questions

Although it appears that there has previously been no Australian-based research specifically on PSTs' and RGs' self-efficacy beliefs and preparedness in teaching students with ASD in inclusive classrooms, previous work performed elsewhere (Jennett et al., 2003) has shown that teachers with inadequate teacher education are likely to have much lower self-efficacy beliefs with respect to teaching children with ASD, and higher levels of burnout.

This doctoral research aimed to explore and address gaps in educational scholarship and a lack of research within the Australian context. Using social cognitive perspectives on self-efficacy beliefs drawn from Bandura (1977; 1986) and a social constructivist paradigm (Creswell, 2013a), this research has investigated the following research questions:

(1) What are pre-service teachers' and recent teacher graduates' views about the inclusion of students with ASD within inclusive classrooms?

(2) What are pre-service teachers' and recent teacher graduates' self-efficacy beliefs and preparedness in educating students with ASD, and what are some of the factors leading to their self-efficacy and preparedness within inclusive classrooms?

(3) What are participating pre-service teachers' and recent teacher graduates' teacher education experiences, and what are the ways of improving their skills and knowledge in teaching students with ASD within inclusive classrooms?

The research questions were well-positioned to explore, through qualitative instruments, the self-efficacy beliefs and preparedness of PSTs and RGs in the context of Bandura's (1977) perspectives. This study also aimed to explore teachers' perceptions about the inclusion of students with ASD, and in particular, the challenges faced within inclusive classrooms. The research was intended to yield significant benefits in key areas of teacher preparation programs and an on-going

professional development initiative for teachers about educating students with ASD. This research may also act as a potential source of new and updated qualitative information about educational policies and practices concerning educating students with ASD within inclusive classrooms.

1.7 Brief description of the research methodology

To answer the research questions (proposed in Section 1.5), an exploratory case study was designed and implemented successfully to provide greater insights into PSTs' and the RGs' perceptions of teaching students in ASD inclusive classrooms. The adoption of an exploratory case study was deemed necessary in this doctoral research as it helped me to explore the phenomenon of interest related to the research questions outlined in Section 1.5. In this study, I aimed to explore the perceptions of PSTs and the RGs in teaching students with ASD conditions and their overall views on self-efficacy and preparedness. This specific research methodology is suited to "What", "How" and "Why" types of probing questions answered within the framework of a qualitative research methodology presented in Chapter 4. An exploratory case study was suitable for my study as it enabled me to ask the "What?" type of questions to gain a better understanding of the phenomenon under investigation. According to Brown (2006), an exploratory research study "tends to tackle new problems on which little or no previous research has been done" (p. 43). As such, this methodology, grounded in a qualitative framework, suited the present research study well since, to the best of my knowledge, no previous study has been conducted in Australia that has explored PSTs' and recent RGs' self-efficacy and preparedness in teaching students with ASD conditions. Additionally, the research questions developed in this research study are expected to open avenues for further examination of the phenomenon under investigation.

This doctoral research involved qualitative data collection, primarily achieved through a series of semi-structured interviews conducted with the PSTs and the RGs from a single university to acquire multiple perspectives on teaching students with ASD conditions in mainstream classrooms. The conceptual framework of this study was guided by Bandura's (1986) social cognitive perspective on self-efficacy, while the research paradigm was related to social constructivism. Self-efficacy is an

individual's belief in the ability to execute certain actions to produce desirable behaviours.

According to Williams (2014), self-efficacy is constructed through experiences that "lay a practical teaching foundation for future teachers" (p. 5). Tschannen-Moran and Hoy (2001) stated that these experiences are built through coursework and field experiences, which can help to increase self-efficacy beliefs in one's capacity and in the positive outcomes of the efforts put in. Social constructivists, on the other hand, assert that reality is created by individuals through interactions with others, and that such reality generally relies on individual perspectives in given situations. Therefore social constructivists believe that significant learning takes place when individuals interact and collaborate in a meaningful manner.

1.8 The significance of this research study

The outcomes of this doctoral study can be significant in exploring new ways that can help support the preparation of effective teachers who teach students with ASD and to promote successful inclusion. To the best of my knowledge, no previous Australian-based study has used a qualitative, exploratory case study approach to explore data about teaching students with ASD in inclusive classrooms. This research intends to make important contributions to both knowledge and existing research, creating avenues for further studies of teachers' perceptions of their self-efficacy and preparedness in teaching students not only with ASD, but in other areas as well. To support this proposition, a significant gap in the literature with respect to PCTs' and in-service teachers' experiences has been identified (Able, Sreckovic, Schultz, Garwood, & Sherman, 2015; Berry, Petrin, Gravelle, & Farmer, 2011; Carter et al., 2014; Marks, Kurth, & Bartz, 2014), which is further detailed in Chapter 2. This research has aimed to help address significant gaps in knowledge to inform inclusive educational practices more effectively with respect to teaching students in inclusive classrooms.

This doctoral study, based on the findings reported in subsequent Chapters 5–7, is likely to provide a significant step forward for key educational bodies and other stake holders to inform their existing and future practices concerning the education

of students with ASD. It may also help them in making new contributions to policy and preparation of efficacious teachers with high calibre in teaching these students. Moreover, the synthesis of data from this doctoral study may contribute to an effective step forward in staff development programs in schools for improving teachers' effectiveness. Information collected from the exploration of the data may further assist the educational bodies to improve inclusive practices and programs, and to provide opportunities for offering comprehensive professional development for all teachers working with individuals with ASD. The contribution is highlighted in greater detail in section 8.3 of Chapter 8.

With respect to overarching potential benefits at a national level, the outcomes of this research thesis are expected to provide valuable, evidence-based information that can help develop educational policy, teacher planning and reform initiatives that embrace the concept of inclusion. Additionally, an understanding and exploration of the inclusion of students within inclusive classrooms can also offer some practical implications identified in previous studies (Sikora, Vora, Coury, & Rosenberg, 2012), to help teachers to be better prepared to work with students with ASD (Witmer & Ferreri, 2014; Yildiz, 2015). The findings are informed by Bandura's (1977; 1997) social cognitive theory of self-efficacy as a key framework that forms the basis of theoretical relevance, influence and implications of the phenomenon under examination. Finally, the exploration of teachers' self-efficacy and preparedness through this study is also expected to improve the educational experience of students with ASD and the results may assist teachers to gain insight into their own self-efficacy and preparedness towards educating students with ASD.

1.9 The researcher's personal note

This doctoral study is based on my personal experiences and interests in teaching students with ASD conditions, and how their learning journeys can be enriched to provide better integration of students with the rest of the community after formal education has concluded. In the early stages of my career, I worked as a general school classroom teacher, followed by being a learning support teacher in several schools in Queensland, Australia. During this time, I had the pleasure of working with students who had ASD conditions, albeit with no formal training, prior knowledge, and experience. Even though I believed that teaching such students is an

ongoing journey of exploration and developments; I still felt that I lacked the inefficacious in me. This was mainly because of my lack of awareness and knowledge about the ASD disorder.

I recall the first time ever I learned about ASD was in the year 2006 when I first started teaching in schools in Australia. Having an undergraduate background from Fiji, I had never heard about ASD during my teacher training programs. As a result of this, I faced significant challenges in understanding their academic, behavioural and social needs of these students – an area that has inspired me to take further education in inclusive education. As a classroom teacher with students with ASD there were only limited times when I was able to understand these student's needs, however, majority of the time I was not able to cater their heterogenous characteristics and needs. I was lucky enough to have a teacher-aide support in my classroom who was highly experienced and knowledgeable about ASD. Even though, I got the right assistance in the classroom and had frequent contact with individual families about how to get the student on task and manage their extreme behaviours, I still faced challenges in planning day to day activities for these students.

These challenges discussed above inspired me to develop myself in teaching students with special needs, including those with ASD. Therefore I decided to pursue a Master's degree in special education and learning support. However, despite this upgraded qualification, I still felt that, even though I had received some knowledge in understanding the issues faced by students with disabilities, mainly students with ASD, I had not acquired enough preparation to accommodate this cohort in my classroom. This may be because I did not have any extensive experience in teaching these students. This led me to question myself about my own and other teachers' self-efficacy beliefs and preparedness in teaching students with ASD, which ultimately led to this doctoral research project.

While working as a learning support relief teacher across several primary and high schools, I saw several other classroom teachers like myself lacked the relevant skills and knowledge in successful accommodating these students in their classrooms. Owing to the extreme behavioural and learning characteristics displayed by these students, which can pose significant challenges for classroom teachers.

Hence, these teachers were more vulnerable to burnout, possibly leading to their attrition from the teaching profession. I have also observed in my own teaching experience that some teachers do not believe that students with ASD can learn, given that some of them are incapable of carrying out their own daily activities. Previous research about teaching students with ASD has shown that teachers' perspectives towards teaching this cohort are generally negative (Humphrey & Hourcade, 2010). All these uncertainties guided me to examine the self-efficacy beliefs and preparedness of final year PSTs and RGs in teaching such students.

Reflecting on my teaching experience, the design of my doctoral study has helped me to explore PSTs' and RGs' voices about their overall experiences, confidence and preparedness in relation to the phenomenon of teaching students who are diagnosed with ASD. The four philosophical underpinnings that have helped me to shape the direction of my study were based on the ontological, epistemological, axiological and methodological assumptions that are embedded in the interpretivist framework. Within this interpretivist framework, I used a social constructivist worldview to understand better the voices of practising teachers. In particular, the worldview of social constructivism has assisted me to develop a better understanding and to make meaning of the teachers' experiences of the world in which they live and work.

Furthermore, the theoretical lens of my doctoral study was guided by the work of Bandura (1997), known as the social cognitive theory of self-efficacy, and by the interpretivist framework of social constructivism. This framework has helped me to explore and to understand the phenomenon under investigation in much greater depth. Finally, my position as the researcher in this doctoral study played an important role in the data analysis and interpretation process. This was mainly because it is the investigator who plans the study, and selects the methodology and the approaches for the analysis of qualitative data (Basit, 2010), especially if key questions pertaining to the researcher's own teaching practice are to be answered. Thus, the researcher is in the best position to explore these phenomena affecting his or her practice. According to Cohen et al. (2007), researchers must be careful in their roles and paradigm preferences to reduce any threats of bias, so I was particularly cautious to implement this perspective in this research journey.

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1.10 The structure of the thesis

This doctoral thesis began with Chapter 1, which has included an introduction section in which I discussed the background of this study. This has focused on the increased number of individuals with ASD conditions in Australia, which has led to an increasing number of students being placed in regular classrooms, and to the impact of teacher education programs in preparing teachers to teach this cohort effectively. This chapter has included the definition of inclusive education, and the history of inclusion in Australian schools. Chapter 1 has also discussed the relevant legislation and educational policies currently practised in relation to the inclusion of students diagnosed with ASD conditions, the study's research questions, and the rationale for, and significance of, the study. The chapter ended with a personal note from the researcher about undertaking this doctoral study.

Chapter 2 provides a detailed review of the most relevant literature related to teaching students with ASD conditions from teachers' perspectives. This chapter has been written to identify, evaluate and synthesise the available literature for the phenomenon investigated in this study. Chapter 3 outlines the conceptual framework of this study, which acted to synthesise contemporary understandings of educational theories and relevant concepts that were applicable to the phenomenon under investigation in this work. Chapter 4 includes the research design and methodology in undertaking this research. This chapter outlines the research paradigm, the qualitative orientation of the research, the case study methodology, the site selection and participant recruitment, the data collection and analysis techniques, the study's rigour and ethical and political considerations.

Chapter 5, 6 and 7 discuss the findings of this doctoral study by answering the three research questions stated in Section 1.5. These questions have been answered using qualitative research techniques such as thematic analysis and decoding the meaning and formulating a range of possible emerging themes that can potentially lead to a greater understanding of the PSTs' and RGs' experiences and views and overall self-efficacy beliefs and preparedness to instruct students with ASD in inclusive classrooms. Chapter 8 concludes the findings of the doctoral thesis

by synthesising the study's outcomes in response to the research questions. This chapter also outlines the knowledge contributions of this doctoral research to the body of literature, followed by some recommendations for future investigations, and the study's limitations and delimitations.

1.11 Chapter summary

This chapter has introduced the framework of this qualitative, exploratory case study about PSTs' and RGs' experiences and voices in teaching students with ASD conditions. Some studies performed elsewhere, and not focusing in the Australian context (for e.g., (Cramer, 2014; McConkey & Bhlirgri, 2003), have shown that teachers are inadequately prepared to accommodate such students in inclusive classrooms. To the researcher's knowledge, no previous study exists in Australia that has used a qualitative, exploratory case study to explore PSTs' and RGs' perspectives in teaching students with ASD conditions. Therefore formal qualitative data, of the kind sought in this study, about teaching students with ASD conditions are limited.

The gaps in the literature were also identified in relation to teaching students with ASD from the perspectives of general or non-specialised teachers (Mathews, 2017). Given the demand arising from an increasing number of students diagnosed with ASD conditions who are placed in inclusive classrooms, it is imperative that teachers have a strong sense of self-efficacy beliefs, and that they are also adequately prepared to cater for the needs of such heterogenous needs. This can be understood as a two-stage process: teachers who are confident and well-prepared are more likely to deal with the distinct characteristics displayed by these students; and hence students may feel equally supported to produce positive outcomes. Therefore this doctoral study offers a very timely and worthwhile investigation.

Chapter 2 Literature review

2.1 Chapter overview

Recently, there has been increased legislative demand concerning the quality of teachers teaching students with ASD (Coates et al., 2017), as a motivation to address the needs arising from the increasing prevalence of such students in inclusive classrooms in Australia, and internationally. Consequently, both contemporary and productive approaches to preparing both PSTs and the RGs in educating students with ASD needs to be explored to develop new measures that better support the academic, behavioural and social needs of these students. Although there has been a considerable degree of research conducted that reports on the increasing incidence of ASD in schools, a significant gap in this knowledge has been identified regarding the rigour and authenticity of methods used in teaching students with ASD (Burns & Ysseldyke, 2009; Carnine, 1999; Coates et al., 2017; Cook, 2011; Hess, Morrier, Heflin, & Ivey, 2008; Kretlow & Blatz, 2011; Martinez & Hallahan, 2000; Williams & Coles, 2011). Since students with ASD are expected to demonstrate extreme behavioural attributes related to their learning, due to their unique social characteristics, they must be taught by various, differentiated means to suit their ASD specific learning needs.

One of the most effective means of educating students with ASD conditions in inclusive classrooms is to ensure that teachers are adequately prepared and skilled with appropriate knowledge and strategies for teaching so that the students can be accommodated successfully into their classrooms. Therefore the purpose of Chapter 2 is to identify scholarly literature and to provide an overview of the current state of research that subsequently provides a basis for this doctoral study of teachers who work with students with ASD within inclusive classrooms. A comprehensive review of the literature about the inclusion of students with ASD conditions within inclusive classrooms and the PSTs' and RGs' perceptions of inclusion and their self-efficacy and preparedness in teaching these students is presented here, together with a significant emphasis on teacher training and teacher preparation.

To ensure credible information, previous studies on teaching students with ASD are collated to address the research questions in Chapter 1. A comprehensive

literature review, which has provided previous research evidence necessary to formulate the research questions, included sources that were of good quality, relevant to this study, and free of bias (Dawidowicz, 2010). The notable databases that were considered for this study were: EBSCOhost Education Research Complete, Informit (Education) and the ProQuest Theses & Dissertations. Databases of journals such as SpringerLink and Sage Journals Online, together with the Wiley Online Library, Taylor & Francis Online and Advanced Google Scholar search tools were also used. The search terms included: teacher self-efficacy, teacher preparedness, teaching students with ASD, teacher training/education, the inclusion of students with ASD, inclusion, definition of inclusion, history of inclusion, history of ASD, special education, pre-service teacher self-efficacy, teacher knowledge/attitudes/perception, teacher confidence, teacher perception educational policy, and practices for students with ASD. For a more focused search, by combining or eliminating the keywords, I also applied Boolean Operators (such as AND, OR, and NOT). To make my search more elaborate but focused, I used the keywords that included autism AND inclusion and teacher self-efficacy OR inclusion. The literature search was restricted to 20 years from 2000 to 2019, although several historical and original works of literature on Bandura's self-efficacy were mandatory inclusions in this research. Furthermore, the literature search included all levels of teachers including those from pre-service teacher backgrounds in Australia as well as in the other parts of the world.

The structure of this chapter is as follows: a history and explanation of Autism Spectrum Disorder is presented (Section 2.2), followed by the diagnostic criteria of ASD (Section 2.3). Next, a literature review (Section 2.4) on applications of qualitative versus quantitative approaches employed in measuring self-efficacy is presented to justify a need for a qualitative method to investigate and explore teachers' self-efficacy towards teaching students with ASD in inclusive classrooms. This follows a review of the inclusion of students with ASD (Section 2.5). In Section 2.6 the teachers' knowledge and understanding of ASD is discussed, in Section 2.7 teachers' perceptions of the inclusion of students with ASD, and in Section 2.8 teachers' self-efficacy to instruct students with ASD is presented to provide a review of previous studies related to the important aspects of this doctoral thesis. Finally, challenges faced by teachers in the inclusion of students with ASD, teachers' knowledge and skills in implementing evidence-based practices (EBPs), and teacher

education and professional development programs from previous studies are reviewed in sub-sections 2.9, 2.10 and 2.11, respectively. A schematic diagram of the literature review is presented as follows:

Section 2.2 (History and Explanation of Autism Spectrum Disorder)

Section 2.3 (Diagnostic Criteria of ASD)

Section 2.4 (Measuring self-efficacy with qualitative versus quantitative approach)

Section 2.5 (Inclusion of students with ASD)

Section 2.6 (Educators' knowledge and understanding about ASD)

Literature review

Section 2.11 (Teacher education and professional development programs)

Section 2.7 (Teachers' perceptions on inclusion of students with ASD)

Section 2.10 (Knowledge and skills in implementing EBPs)

Section 2.8 (Teachers' self-efficacy to instruct students with ASD)

Section 2.9 (Teachers' challenges in inclusion of students with ASD)

Figure 2. 1. Schematic diagram of literature review

2.2. History and explanation of Autism Spectrum Disorder (ASD)

ASD can be described as a developmental disability that can potentially lead to social, communication and behavioural issues faced by any individual. Leo Kanner, a child psychiatrist, was the first person to describe autism as a syndrome in 1943. He identified autism based on 11 children he saw in his clinic. Initially, he described the characteristics of these children as schizophrenia; however, he realised that there were certain characteristics that did not resemble childhood schizophrenia such as, early onset, lack of hallucinations, and family histories (Mesibov, 2000). Based on this, he described autism as a different disorder with characteristics that included "language impairments, social isolation and insistence on sameness" (Mesibov et.al. 2002, p. 3). Generally, ASD is considered as a lifelong disorder that begins during an early onset period and continues into adulthood (Romero et al., 2016). Individuals with ASD are likely to face developmental challenges and their signs and symptoms vary widely in character and the severity between individuals. This may also lead to mental and health issues (Autism Cooperative Research Centre [Autism CRC], 2018).

Typically, children with ASD have primary deficits in three main areas: social interaction, communication, and the presence of repetitive and stereotyped behaviours and restricted interests (American Psychiatric Association, 2013). Owing to their deficits in social interactions and the deficits in verbal and non-verbal communication skills, these individuals generally fail to respond to others. They also have difficulties in understanding and interpreting the viewpoint of others (Jones, Carr, & Klin, 2008). Some children diagnosed with ASD can display significant language delays and can also face difficulties in starting or ending a conversation (Myers & Johnson, 2007). The children who show repetitive and/or stereotyped and restricted interests may further have significant difficulties in learning and adapting to social needs.

2.3 Diagnostic criteria of ASD

The American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5) is commonly used as a standardised criterion to diagnose ASD. The devised tool DSM-5 has merged other diagnosis methods such as autistic

disorder; Asperger's syndrome/disorder; child disintegrative disorder; and pervasive developmental disorder, not otherwise specified (PDD-NOS) into a single team umbrella as Autism Spectrum Disorder (ASD). Before the introduction of DSM-5, the autism spectrum was labelled under the pervasive developmental disorders category that included pervasive developmental disorder, not otherwise specified (PDD-NOS), autistic disorder, and the Asperger's disorder. Now these disorders fall under a separate diagnostic criterion and no longer fall under pervasive development disorder (American Psychiatric Association, 2013).

Table 2. 1

*ASD-related Severity of Social and Communication Deficit*s

Adapted from American Psychiatric Association (2013)

Severity Level	Social Communication	Restrictive Behaviours
Level 3 Requires very significant support	Considerable deficits in language, which impairs social interactions	Regimented routines defined by intensely focussed interests, which impact daily functioning
Level 2 Requires significant support	Recognisable impairments in expressive and receptive communication that persist even with support	Regimented routines defined by intensely focussed interests, which frequently impact functioning in multiple settings
Level 1 Requires some support	Difficulty maintaining social engagement without individual support	Regimented routines defined by intensely focussed interests, which impacts functioning by hindering the development of personal autonomy

Diagnosing an individual with ASD must include a history of their children symptoms related to ASD, which includes deficits in social skills, restrictive behaviours and impairment in social abilities under the diagnostic criteria (American Psychiatric Association, 2013). Moreover, the severity of the social and communication deficits of individuals with ASD can be measurement by the degree of severity as shown in Table 2.1

Consequently, it can be interpreted that characteristics of individuals with ASD may result in educational challenges and their effective inclusion in general education (Zhang & Griffin, 2007). Accordingly, all teachers who work with these students must be aware of the early warning signs to inform parents, for early diagnosis and intervention to take place. Autism is called a spectrum disorder since its manifestation covers a wide variation of signs and symptoms, from a mild deficit to a profound severity of the disorder (Ashwell, 2009). Subsequently, children with the same ASD diagnosis are likely to demonstrate behaviours and accomplishments that are different from one another (Busby et al., 2012). Therefore teachers must ensure that students with ASD have their own individualised plan to be taught successfully. Moreover, teachers must be knowledgeable and skilled in all aspects of ASD to support the individual needs of these students when they are placed in inclusive classrooms.

2.4 Measuring self-efficacy with qualitative versus quantitative approach

In the past, to measure teachers' self-efficacy beliefs, several teacher-tailored quantitative instruments were used, and one such example was the Teacher Efficacy Scale designed by Tschannen-Moran and Woolfolk Hoy (2001). This scale, presented as a quantitative instrument to extract information about a teacher's self-efficacy beliefs, was originally based on Bandura's Teachers' Self-Efficacy Scale (1997). In such a scale, the quantitative means of gathering teachers' self-efficacy data was largely based on the Likert scale, which is a psychometric scale commonly involved in research that employs questionnaires.

The Likert scale (as a tool for quantitative research instrument) for self-efficacy studies has been relatively popular, as noted by Glackin and Hohenstein (2018). In spite of the usefulness of this instrument in self-efficacy studies, several investigators were concerned about the quantitative methodology of data collection on self-efficacy, and in fact, they have suggested that these methods were likely to provide a rather incomplete view of the phenomenon under investigation (Glackin & Hohenstein, 2018).

As reviewed by Klassen and colleagues (2011), almost 76.1% ($n = 167$) of all studies performed on teacher self-efficacy between the period 1998 and 2007 had

used a quantitative (or numerical) methodology for data collection. Therefore it appears that many researchers have largely discounted the requirement for a more qualitative study on teacher self-efficacy, and were not concerned about a possible lack of in-depth understanding of self-efficacy beliefs that are not afforded by quantitative methods (Klassen et al., 2011; Kleinsasser, 2014; Tschannen-Moran & Hoy, 2001; Wheatley, 2005). An in-depth understanding (through rich information) on any teacher's self-efficacy beliefs may not be obtained easily through a quantitative methodology.

It can therefore be construed that, by using quantitative approaches to collecting data about teachers' self-efficacy beliefs, one may not adequately be able to capture the multifaceted dimensions of teachers' self-efficacy, and as such, studies can largely be "offering a limited insight into potential types of teacher self-efficacy (example., subject, pedagogy, and management) or the teachers' context" (Glackin & Hohenstein, 2018, p. 273). Other concerning issues that may arise with quantitative instruments could be the validity, reliability and specificity of the instruments, given that there are many research instruments produced about self-efficacy (Glackin & Hohenstein, 2018). Tschannen-Moran and Johnson (2011) have also stated that issues regarding construct validity may arise when attempts are made to develop new instruments for measuring levels of self-efficacy.

Furthermore, researchers such as Labone (2004), Wheatley (2005) and Klassen et al. (2011) have argued that there is a need for more qualitative methods in collecting data about teachers' self-efficacy, given the limited number of studies conducted about teacher efficacy in general that use qualitative methods. Wyatt (2015) found that qualitative means of studying teachers' self-efficacy beliefs were "overwhelmingly neglected" (p. 117), despite the need for rich and thick data to study carefully this important indicator of inclusive practices, arguing that, by using qualitative approaches, one may be able to offer a more detailed understanding of teachers' self-efficacy. According to Williams (2014), researchers "must explore not only the existence of teachers' beliefs such as those measured by instruments, but also devise measures to better understand the ways in which background experiences are likely to influence current beliefs and behaviours" (p. 40). Tschannen-Moran and Hoy (2001) further argued that the study of teachers' self-efficacy beliefs was

lacking in education research, since researchers face challenges in developing instruments that can provide comprehensive measurements of teachers' self-efficacy.

Hence, inspired by a lack of qualitative studies within this context, a qualitative method has been chosen for the current doctoral study to study teachers' self-efficacy beliefs and preparedness in teaching students with ASD conditions in inclusive classrooms. According to a study by Usher and Pajares (2008), "qualitative inquiry provides a phenomenological lens through which the development of efficacy beliefs can be viewed, and it can capture the personal, social, situational, and temporal conditions under which students cognitively process and appraise their beliefs and experience" (p. 784). Moreover, using qualitative methods of data collection is expected to provide crucial information about "what" and "how" various experiences, concerns, support and training shape teachers' self-efficacy in teaching students with ASD.

Accordingly, this doctoral study intends to address gaps in scholarly literature in respect to a relative lack of qualitative methodologies for studying teachers' self-efficacy beliefs and perceptions in teaching students with ASD. In particular, the research methodology (i.e. Chapter 4) includes a qualitative method to fill this gap to make new methodological contributions to knowledge by exploring teachers' self-efficacy beliefs, perceptions and preparedness and adding to the existing literature. Thus, the research focusses on qualitative data gathered at an Australian regional university from both PSTs and RGs.

2.5 Inclusion of students with ASD

Despite the challenges that they face in terms of their behavioural characteristics, students diagnosed with ASD conditions can succeed in inclusive classrooms (Aller, 2017). In general, an inclusive environment also denoted as a responsive learning environment within the context of school education, is one that aims to create a supportive environment for all learners, including the idea that those students with learning difficulties may challenge or be challenged by, and engage with, other learners. A study performed by Grindle et al. (2012) found that students who spent most of their time in inclusive classrooms progressed much more quickly than those who were provided with one-to-one interventions. These findings were

consistent with those of Zhang and Hu (2015), who stated that inclusion might be beneficial for students with learning disabilities and those with ASD conditions. Other researchers have found students with special needs included in regular classrooms are more engaged through social interaction, receive more social support, have more connections with friends, and have their Individualised Education Plan (IEP) to help them meet their goals (Harrower & Dunlap, 2001).

Moreover, having students with ASD in inclusive classrooms will enable them to interact with other students, which may lead to an escalation of their self-esteem since they feel a sense of belonging in their classroom. Inclusion can be explained as a philosophy of acceptance whereby all students in general classrooms are valued and treated with respect (Kaur, Noman, & Awang-Hashim, 2016), and therefore experience equitable educational learning journeys. Moreover, providing varied instructions to students with special needs who are included full-time in general classrooms can be well-defined as inclusion (Gehrke, Cocchiarella, Harris, & Puckett, 2014). Thus, inclusion is considered a human right whereby equal learning opportunities are provided to all individuals within classrooms. Previously, when traditional educational practices were the norm, there appeared to be less documented evidence about the inclusion of students with ASD conditions in general classrooms (McKeating, 2013).

Additionally, according to Hundert (2009), there are limited studies that demonstrated that the placement of students with ASD in inclusive classrooms with typically developing students would lead to an increase in social skills. Hundert (2009) further reported that students with special needs in general classrooms tend to be academically behind compared to their peers, they pay less attention in the class, display more disruptive behaviours, are more time demanding, and connect less with their peers. On the same note, many parents and educators are concerned that inclusion may negatively influence the academic achievements of typically developing students since students with special needs require more of teachers' time, attention, and support (Demeris, Childs, & Jordan, 2007). Despite these limitations, teachers must understand that for a successful inclusive classroom, it is essential that they develop adequate skills in implementing effective ASD-specific teaching

strategies to offer academic, behavioural and social support to help such students to reach their full potential.

The inclusion of students in general classrooms can be beneficial if teachers are well-trained and skilled in educating these students. Although research indicates many benefits of inclusion, in general, higher expectations are anticipated by teachers (Ryndak, Ward, Alper, Montgomery, & Storch, 2010). Facilitating the inclusion of students with ASD in general classrooms requires not only well-trained teachers, but also the cooperation of all stakeholders involved, support services, and other relevant ASD specific programs (Majoko, 2016). However, teachers working with students with ASD need to plan strategically to offer a successful education to all students with various degrees of diversity. Such students need to be treated with equity, cooperation, and a sense of belonging in their classrooms, even though they may progress academically and socially in a different manner from that of their peers in the same classroom.

According to Gordon (2017), "many inclusive programs lack the protocols and guidelines needed to facilitate effective placement for these students" (p. 15). Hence, there appears to be a limited degree of research conducted in the area that identifies the components of inclusive programs that are effective for students with ASD conditions (Simpson, de Boer-Ott, & Smith-Myles, 2003). Additionally, according to Talib and Paulson (2015), holding genuine beliefs and having comprehensive knowledge about ASD conditions are essential for general education and special education teachers alike. Educationally skilled and experienced teachers are more likely to make sound judgments in providing the successful inclusion of students with ASD. Finally, for effective inclusion to take place, schools must promote the ecology of inclusive practices, where there are several supports are available for not only teaching students with ASD but all those students who have special needs.

2.6 Educators' knowledge and understanding about ASD

It is important that all teachers who educate students with ASD conditions are equipped with knowledge and understanding about ASD itself as such, information is required to accommodate these students successfully within their classrooms. Some

teachers pursue professional developments (PDs) outside their teacher education programs; however, these such PDs have proven to be relatively ineffective in addressing the diverse needs of students with ASD conditions (Shelton, 2013). Importantly, teacher self-efficacy in teaching these kinds of students depends entirely on the teachers' knowledge and understanding of ASD conditions. If these requirements are not met by existing teacher preparatory programs, then the PSTs and RGs are likely to face challenges in successfully teaching students diagnosed with ASD conditions in inclusive classrooms.

Many studies support the contention that there is generally limited knowledge about different facets of ASD conditions among teachers working with students with ASD (Hansen, 2015; Loiacono & Allen, 2008). An Australian-based study performed by Soto-Chodiman, Pooley, Cohen and Taylor (2012) used semi-structured interviews to investigate the challenges faced by teachers working with students with ASD in inclusive classrooms in 12 primary schools (K–7) in Western Australia. They found that these teacher participants had a very limited knowledge about ASD conditions. The participants in this study indicated that "they felt particularly ill-prepared for the educational challenges that lay ahead of them" (p. 102) when teaching these students. Limited understanding about ASD conditions may therefore lead to teachers' inability to recognise the signs, characteristics and triggers related to ASD conditions that could potentially lead to extreme challenges within inclusive classrooms. It is therefore crucial that all teachers can recognise the behaviours demonstrated by such students as requiring early intervention programs.

Studies performed outside Australia have found that a large majority of general classroom teachers are concerned about their lack of knowledge of ASD conditions and the most relevant teaching approaches to work effectively with such students (Soto-Chodiman et al., 2012; Yumak & Akgul, 2010). For example, a study by Yasar and Cronin (2014) examined the knowledge and awareness of 551 PSTs across two universities in Turkey. In their study, PSTs portrayed a limited knowledge and understanding about ASD. In fact, the participants in their study also said that they needed more lessons and preparations about teaching students with ASD conditions, to be able to teach them effectively in their regular classrooms.

One study conducted by Barned, Knapp, and Neuharth-Pritchett (2011) about 15 early childhood PSTs at a southern university in the United States found that teachers demonstrated limited knowledge and some misunderstandings about ASD conditions and about the needs of such students in inclusive classrooms. In their study, it was found that none of these teachers had had any explicit training concerning the inclusion of these students, which may have led to their apprehension about their classroom practices. Therefore "collegiate and non-collegiate preparation and in-service training" (p. 3) for all teachers were recommended as a primary outcome of this study. Teachers need further training and experiences with ASD to improve their confidence in accommodating these students in their classrooms. According to Cramer (2014), general classroom teachers are normally required to take only one special education course, while special education teachers who work specifically with special needs students must undertake multiple courses in special needs areas. Accordingly, these general classroom teachers do not have the same skills, knowledge, understanding and experiences as special education educators.

Cramer (2014) further asserted that "this drastic increase in identification and inclusion of students with ASD has resulted in a lack of knowledge and training among teachers" (p. 79). Consequently, teachers may feel ill-prepared and inefficacious owing to the challenges that they face while accommodating these students in their classrooms. This results in unfair treatment of such students, when they are not educated as per their learning abilities and requirements. General classroom teachers who use general teaching approaches to satisfy the academic, behavioural and social needs of students with ASD are not serving these students well (Whitby, Travers, & Harnik, 2009). Thus, it is important that teachers coordinate their teaching interventions to address the unique profiles of these students to promote their success. Another recent survey in Turkey by Rakap, Balikci, Parlak-Rakap and Kalkan (2016) investigated the knowledge of ASD conditions among 404 PSTs during the final years of their teacher education programs. The findings of this study also indicated that PSTs had inadequate knowledge about ASD and, as such, a recommendation was made to develop both pre- and in-service training programs for teachers specifically teaching students with ASD conditions. Although these studies were not based on the Australian context, they indicate some gaps in teacher education programs elsewhere, and, if such gaps

are addressed, teaching education programs related to ASD can be made more effective.

Moreover, research has demonstrated that teachers' expectations about teaching students with special needs, including those with ASD, have a profound impact on their actual approaches towards teaching goals, teaching methods and educational applications (Lane, Carter, Common, & Jordan, 2012). Additionally, according to the study of Busby et al. (2012), although teachers have basic knowledge and understanding of ASD conditions, they often lack the more specialised training needed in this area. Therefore, there is an urgent need for focused teaching education and preparation to enhance teachers' capacity to teach students with ASD conditions.

There is a strong possibility that having a good understanding about ASD conditions can have implications for the educational planning process for students with ASD conditions in inclusive classrooms. Teachers' limited knowledge about inclusive education can be a primary barrier towards inclusive practices (Baglieri, Bejoian, Broderick, Connor, & Valle, 2011). Rose (2001) believes that

> If teacher preparedness can be identified as a critical factor in the movement
>
> towards inclusion, it is essential that those who are involved in teacher
>
> education, both pre- and post-qualification, and others who have a
>
> responsibility for educational legislation, support teachers in gaining
>
> confidence in addressing educational needs of students. (p. 149)

Therefore teachers who have limited knowledge and understanding of ASD may develop negative attitudes towards such students, which could then lead to a lower degree of teaching confidence and teacher performance outputs.

2.7 Teachers' perceptions on inclusion of students' with ASD

Research evidence has demonstrated that teacher perceptions of their students have a significant impact on student success (Hayes, 2014). The successful inclusion of students with ASD must include teachers' positive attitudes towards teaching these students. Teacher confidence in teaching such students can be developed only

if teachers have positive attitudes or perceptions towards the inclusion of students with ASD. For example, Hernandez (2013) stated that successful inclusion includes positive attitudes of all stakeholders, professional knowledge, and confidence in teaching practice.

There are several studies that have investigated data from practising teachers, mainly about their attitudes towards the inclusion of students with ASD (Barned et al., 2011). A recent Australian based study, utilising the Autism Attitude Scale for Teachers, examined 107 primary school teachers' attitudes towards the inclusion of students with ASD in their classrooms (Garrad, Rayner, & Pedersen, 2019). In this study, it was found that teachers were generally positive towards the inclusion of these students, as opposed to some of the other studies (Garrad et al., 2019), which indicated that successful inclusion of students with ASD can take place in inclusive classrooms. Furthermore, the authors reported that the essential elements responsible for teachers' attitudes in teaching these students include "the amount of specialist training received and the length of specific ASD teaching experiences" (p. 2). Studies conducted outside Australia on teachers' attitudes have demonstrated that many teachers expressed significant anxiety towards inclusive education (Huang & Diamond, 2009; Petriwskyj, 2010; Vakil, Welton, O'Connor, & Kline, 2009), and that these teachers also felt unprepared to teach students within inclusive classrooms (Hemmings & Woodcock, 2011). Therefore it is important to recognise that initial teacher education programs may potentially influence the perceptions around teaching students with special needs in their classrooms (Loreman, Sharma, & Forlin, 2013), including those with ASD.

A qualitative study explored five primary school teachers' perceptions about their preparedness in teaching students with ASD in their regular classrooms in New Zealand (Apers, 2016). It was found that teachers' prior knowledge and teaching experiences influenced their preparedness in developing and practising inclusive pedagogy, not only for students with ASD but for all students in their classrooms. Participants also felt that they needed more support in their regular classrooms to offer positive learning experiences to these students. It was further demonstrated that "inclusion of students with ASD in the regular classroom is possible and that this can

be a positive experience that benefits the student with ASD, other students, the teachers themselves, the school, and the wider community" (Apers, 2016. p. 1).

Another qualitative study conducted in the United States by Messemer (2010) examined perceptions of regular classroom teachers regarding the inclusion of students with ASD. In this qualitative study, interviews with 10 participants were conducted where nine of the participants believed that they could teach in inclusive classrooms; however, they also reported that they required administrative support, time for planning and opportunities for on-going professional developments. The findings of this US-based study are supported by Showalter-Barnes (2008).

Furthermore, Lohrmann and Bambara (2006) also used a qualitative approach to investigate teacher perceptions about supports provided to them to successfully include students with challenging behaviours in New Jersey and Eastern Pennsylvania. All fourteen teachers who participated in this study stressed the importance of support required to successfully accommodate students with behavioural issues in their classrooms. The first level of support mentioned by the participants was "a school-wide culture of support where an articulated school vision for inclusion, in-class support, and a collegial atmosphere are present" and the second level was situation specific, whereby individualized supports are provided in response to emerging teacher needs (Lohrmann & Bambara, 2006, p. 157). Furthermore, the participants agreed that it is important to have extra support personnel in the classroom to assist other students, as well as to assist the students they are assigned to.

Moreover, Condrey (2015) conducted a survey and relevant interviews to examine K-5 general classroom teachers' perceptions of self-efficacy in teaching students with ASD in inclusive environments. The researcher examined teachers' beliefs in the "areas of preparedness, support, and overall attitude towards students in inclusion" (p. 4). The findings revealed that the teachers viewed inclusion as positive and beneficial to students. Research conducted by Hudes (2017), studying teachers' perceptions of their preparedness and self-efficacy about teaching students with ASD, found that there was a "significant positive relationship between the following factors in regard to working with students with ASD: perceived effectiveness of teacher preparation programs and perceived preparedness; perceived effectiveness of

professional development workshops and perceived preparedness; and perceived preparedness and perceived self-efficacy" (p. 7). Conversely, it was also found that there was no relationship between teachers' feelings of preparedness and self-efficacy and the years of experiences, teaching grade and education level. Segall (2008) and Wilkerson (2012) have reported in their studies that teachers held positive attitudes towards the inclusion of students diagnosed with ASD in their classrooms; however, they also expressed their lack of knowledge concerning inclusive practices. This may have been a result of their limited training and experiences in teaching these students. The next sub-section of this chapter discusses teachers' self-efficacy in teaching students with ASD.

2.8 Teachers' self-efficacy to instruct students with ASD

Research efforts made to measure teachers' self-efficacy beliefs about teaching students with ASD conditions have been relatively limited (Corona, Christodulu, & Rinaldi, 2017; Love, 2016). As far as the researcher is aware, there has been limited research conducted about teaching these students in Australia, and therefore studies performed outside Australia were explored to understand this phenomenon better, albeit in a different educational environment. Furthermore, no research studies were found that had specifically studied PSTs' (Cramer, 2014) and RGs ability to teach students with ASD. Yet, several studies reported that practising teachers had high degrees of self-efficacy beliefs about their capability to teach students with ASD in inclusive classrooms (Busby et al., 2012; Morgan, 2013; Ruble, Usher, & McGrew, 2011; Siu & Ho, 2010).

One study performed by Ruble et al. (2011) examined the predictors of self-efficacy, based on 35 special education teachers working with students with ASD. The authors also examined Bandura's (1977; 1982; 1997) four sources of self-efficacy: (1) sense of mastery; (2) social persuasions; and (3) physiological and (4) affective states. They further found significant relationships between physiological and affective states (i.e., teacher burnout) and teachers' self-efficacy but no association was identified for the other three sources of self-efficacy.

Another recent study that examined school professionals' self-efficacy in dealing with students with ASD conditions (Corona et al., 2017) also considered

their prior experiences, key knowledge and training relevant to teaching such students. The results from this study stressed the importance of training required to improve school professionals' self-efficacy, and to maintain continued efforts in offering quality training to all individuals who work with students with ASD conditions.

In another study that explored the variables associated with teachers' burnout in teaching students with ASD, the philosophy of underlying teaching approaches for ASD and teachers' self-efficacy beliefs were analysed (Jennett et al., 2003). Teachers who took part in this study had used Applied Behaviour Analysis (n = 34), and TEACCH (Treatment and Education of Autistic and Related Communication-Related Handicapped Children) (n = 30) as primary tools to implement effective teaching practices. The results showed that there was "a significant difference in philosophical commitment between the groups, but no differences in teaching efficacy or burnout' (p. 583). Notably, there was also a significant relationship between teachers' commitments to their teaching methods and the dimensions of teaching efficacy and burnout. Moreover, the need for appropriate training for teaching students with ASD was clearly articulated by these authors.

To explore PSTs' self-efficacy beliefs about the inclusion of students with ASD conditions in the United States, Cramer (2014) used the Teachers' Sense of Efficacy Scale (TSES) and showed that the participants had a lower self-efficacy belief about their capability to teach students with ASD in inclusive settings than about their ability to teach students with general disabilities. In other words, the outcome of this study clearly showed that teachers had limited ability and skills to educate students with ASD. Consequently, this could lead to an increase in teachers' susceptibility to stress and burnout, which may eventually lead to increased teacher attrition rates (Billingsley, Carlson, & Klein, 2004). Therefore it is significant to study PSTs' self-efficacy beliefs about their ability to educate students with ASD in inclusive classrooms since self-efficacy is associated with teachers' psychological status, teaching satisfaction, job stress and exhaustion (Betoret, 2006; Klassen & Chiu, 2010). Teacher education is the best time to enhance teachers' self-efficacy beliefs. Furthermore, it is important to explore RGs' self-efficacy to provide insights

into how to further develop their abilities to teach students diagnosed with ASD conditions.

Gordon (2017) conducted a qualitative study to explore the effects of teachers' self-efficacy in relation to the inclusion of students with ASD in general classrooms. In this study, 11 general classroom teachers were interviewed to provide insights into their experiences and beliefs related to including students with ASD in their classrooms. The participants also reflected on their beliefs, training and the practices of teaching students with ASD. The findings showed that there was a significant relationship between "teacher self-efficacy and the importance of knowledge and positive experiences teaching students with autism" (p. 14). Therefore it can be said that teachers' knowledge about ASD conditions and their positive experiences in teaching these students may have a positive impact on teacher efficacy. Thus, the findings of this study suggested a requirement for continued pre-service and in-service education for all teachers, which may allow them to be better prepared to teach such students in inclusive classrooms. Furthermore, there needs to be a change in teacher preparation programs to provide beginning teachers with the foundational knowledge and experience needed for the successful inclusion of such students.

Love, Toland, Usher, Campbell, and Spriggs (2019) argue that "teachers' efficacy beliefs are not universal and whether or not one feels like a capable teacher depends in part on the changing demands of one's teaching environment" (p. 43). This statement aligns with Bandura's (1997) theorising of self-efficacy as "a dynamic, multifaceted belief system that operates selectively across different activity domains and under different situational demands, rather than being a decontextualized conglomerate" (p. 42). Still, specific kinds of research about teacher' self-efficacy have been overlooked, mainly in relation to contextual factors such as the quality of the content, school settings or student features (Klassen et al., 2012). Hence it is important to investigate teachers' self-efficacy in teaching students with ASD in different contexts as well – for example, whether the severity of ASD affects teacher self-efficacy, teacher education, experiences, professional development, and personal contact with individuals with ASD.

Teacher self-efficacy studies have been conducted in subject areas such as mathematics, reading and writing (Love et al., 2019), but it has also been suggested that teachers' specific measurement of self-efficacy can possibly assist education authorities to identify where more provision of support will be required when teaching challenging students, such as those on the ASD spectrum (Ruble et al., 2011). Accordingly, assessing teacher self-efficacy can provide critical information to policy-makers, teachers and investigators in identifying successful means of training teachers and designing future professional developments programs for such teachers (Wyatt, 2014). Some of the ingredients of successful programs or professional developments initiatives in preparing effective teachers for teaching students may include identifying the characteristics of ASD; understanding current research and EBP strategies in ASD; understanding behavioural, emotional, communication, technology, sensory-based and medically-based approaches (Shyman, 2012). Other important components to include could be to train teachers the process of developing an education adjustment plan or individualised education plan for students with ASD to enhance their development skills.

To explore this phenomenon further, I refer to previous studies by Sharma, Shaukat, and Furlonger (2015) who reported that pre-service teachers enrolled in special education programs are likely to exhibit a higher level of teaching self-efficacy than those enrolled in general teacher education programs. Participating in a special education programs has also enabled PSTs to learn a range of new skills required to work with students with learning disabilities, which may have improved their teaching self-efficacy beliefs. On the other hand, participants enrolled in general education demonstrated lower teaching self-efficacy, suggesting that they may not feel competent to teach students with disabilities (Sharma, Forlin, & Loreman, 2007). Mainstream classroom teachers who are not sufficiently trained in special education tend to oppose the idea of inclusive education (Bindal & Sharma, 2010).

Another overseas study, guided by Bandura's (1997) theory of self-efficacy, investigated how general education teachers' self-efficacy was related to their readiness to teach students with ASD in inclusive settings (Messemer, 2010). The findings of this study showed that these teachers felt capable of educating students in inclusive settings if "provided with consistent planning time, administrative support,

and professional development opportunities" (p. 3).Teaching self-efficacy is positively related to teachers' classroom performance and job satisfaction (Caprara, Barbaranelli, Borgogni, & Steca, 2003; Klassen & Chiu, 2010; Tschannen-Moran & Hoy, 2007).

A study carried out in five different countries found a positive correlation between teachers' job satisfaction and their teaching self-efficacy beliefs (Klassen et al., 2009). Furthermore, teachers' self-efficacy is related to positive student success and outcomes and to student motivation, which have been shown to influence teachers' classroom practices, enthusiasm and commitment to teaching (Skaalvik & Skaalvik, 2007; Tschannen-Moran & Hoy, 2001; Wolters & Daugherty, 2007). Moreover, according to Betoret (2006), teachers who experience low self-efficacy face greater job-related stress owing to the challenges they face during teaching. Teachers with high levels of self-efficacy are more proficient in using effective teaching strategies, are more capable in ensuring student engagement, and possess successful classroom management techniques (Brouwers & Tomic, 2000; Caprara, Barbaranelli, Steca, & Malone, 2006). Moreover, teachers with high levels of self-efficacy make more effort to overcome the challenges they face in their classrooms, and such teachers can retain these efforts much longer (Bandura, 1977; 1986).

Hence teachers with high levels of self-efficacy and job satisfaction and with less stress are less likely to quit teaching (Caprara et al., 2006). Understanding teachers' self-efficacy in teaching can offer insights into how effective and prepared the teachers are in their teaching tasks. Notably, teachers' sense of self-efficacy differs according to various circumstances such as the types of learners teachers may encounter (Love et al., 2019; Tschannen-Moran & Hoy, 2001). Some teachers may experience low self-efficacy in their ability to teach students with challenging behaviours.

Finally, I refer to Bandura (1997) who stipulated that teachers with a high sense of teacher self-efficacy "operate on the belief that difficult students are teachable through extra effort and appropriate techniques and that they can enlist family supports and overcome negative community influences through effective teaching" (p. 240). Furthermore, teachers need not only have focused knowledge and skills in teaching students with ASD but also accessible supports and ASD specific

resources (Leblanc et al., 2009). Therefore exploring teachers' self-efficacy in teaching students with ASD conditions, in the context of an Australian regional university in this doctoral research, can be useful to understand what other factors may influence their self-efficacy and preparedness apart from their teaching qualifications. Hence, the present doctoral study is adding value to, building on, and also extending the analysis of Bandura (1997), particularly in relation to the teachers' self-efficacy as a collaborative, socialised and interactionist phenomenon through acquiring more support, working with mentors and building a collaborative community network.

2.9 Teachers' challenges in the inclusion of students with ASD

This section specifically discusses the challenges faced by teachers in the inclusion of students with ASD, as evidenced in earlier studies (Busby et al., 2012; Gordon, 2017). Given the potentially extreme characteristics displayed by such students, the responsibility to educate them in inclusive classrooms can be very challenging and complex. Since these groups are heterogeneous, teaching approaches that are successful for some students may not be successful for others (Handleman & Harris, 2008). Therefore, teacher preparation for teaching this group of students can be very challenging. In this section of the chapter, I draw evidence from studies that show that teachers are likely to face significant challenges owing to the severity of the ASD (2017). According to Lindsay et al. (2013):

> Challenges in including children with ASD, as reported by the teachers
>
> interviewed, are as follows: understanding and managing behaviour;
>
> sociostructural barriers (i.e., school policy, lack of training and resources);
>
> and creating an inclusive environment (i.e., lack of understanding from other
>
> teachers, students and parents). (p. 354)

Additionally, owing to the challenges faced by teachers in teaching these students, even the skilled and highly experienced educators can feel the challenges and a sense of being unqualified to educate these students (Simpson, de Boer-Ott, & Smith-Myles, 2003). Simpson et al. (2003) identified that there was limited research about effective inclusive programs for students with ASD. However, one study

conducted by Busby, Ingram, Bowron, Oliver and Lyons (2012) analysed the challenges and needs of teachers of students with ASD in their classrooms. The Nominal Group Technique (NGT) was used to find the challenges faced by 23 graduate students teaching in a rural school in southeast Alabama. NGT is designed to recognise the problem in order to find solutions. The participants found five challenges in teaching students with ASD in general classrooms. These challenges included: (1) Teaching students with ASD is a highly individualised and specialised process, for which teachers need specialised skills and personal attributes to teach these students effectively. Therefore teachers needs to be highly trained in teaching these students. (2) There are challenges in collaborating with fellow teachers and parents of students with ASD. The participants also noted that such collaboration is often time-consuming and difficult, given that they must consider the needs of the other students in the classrooms. (3) Complex and disruptive behaviours of students with ASD can be a challenge to classroom teachers. Participants believed that these students "would disrupt the routine of the classroom for misbehaviour, time constraints, and extra assistance needed for work" (p. 32). (4) The process of IEPs, which involves data collection and keeping records, is "extensive and redundant" (p. 32). Although most of the participants appeared to understand the process and purpose of an IEP, they lacked confidence in writing an IEP and implementing it. (5) The final challenge was the assumption that most general education teachers lacked the foundational knowledge and skills needed to fully accommodate students with ASD in their classrooms.

There are several factors that may influence teachers' abilities in overcoming the challenges in teaching in inclusive classrooms. These are effective teacher education, the promotion of inclusive policy and practices, the availability of support systems, the involvement of parents, the availability of ASD-specific resources, and support from teacher assistants (Hill & Sukbunpant, 2013; Kurth & Mastergeorge, 2010; McMaster, 2014; Newton, Hunter-Johnson, Gardiner-Farquharson, & Cambridge, 2014; Soto-Chodiman et al., 2012). Although these studies seemed to agree about the factors mentioned above, they differed in their efforts to address inclusive culture in teaching students with ASD in general classrooms. On the other hand, Lee, Patterson, and Vega (2011a) discovered that inadequate support from school, limited resources, uncontrollable class sizes, and demanding workloads can

have an impact on teachers' stress levels and their confidence in teaching these students.

In addition, a study by DeMatthews and Mawhinney (2014), on the challenges faced by school leaders in embracing inclusive models in their schools, identified that the availability of resources, teachers' knowledge and skills about their ability to operate successfully in inclusive environments was a significant issue when trying to implement inclusive environments. Furthermore, Kavale's (2002) study found that some teachers felt nervous about having students with special needs in their classrooms. This was because of their low self-efficacy or preparedness in accommodating these students in their classrooms, and hence they felt concerned about their readiness in educating such students. This also indicates that extensive experiences and ASD-specific training may help accommodate these students effectively (Roberts, Keane, & Clark, 2008; Simpson et al., 2003). Extensive experiences align with one of Bandura's (1997) sources of self-efficacy, that is, mastery experiences that may affect teacher self-efficacy in teaching these students.

Furthermore, given the range of complexity of ASD conditions, teachers must advance their knowledge and skills in EBPs that are proven to be effective in educating these students. The next section discusses teachers' knowledge and skills in implementing EBPs related to ASD-specific interventions.

2.10 Knowledge in implementing Evidence - Based Practices

A recent development in the field of ASD emphasises the use of evidence-based practices (EBPs) for individuals with ASD, and this should be emphasised during teacher education and professional development events to increase teacher effectiveness (Strong, 2014). Given that students with ASD are increasing in numbers in inclusive classrooms, it is important that educators have a good understanding of EBPs to help these students to meet their educational goals. Marder and deBettencourt (2015) defined EBPs as "instructional strategies, interventions, or teaching programs that result in consistent positive student outcomes" (p. 5).

Evidence has proven that EBPs have a significant impact on the lives of individuals with ASD as well as on their families (Simpson, McKee, Teeter, & Beytien, 2007). Furthermore, both the Individuals with Disabilities Education

Improvement Act (IDEIA, 2004) and the No Child Left Behind Act (NCLB, 2001) require teachers to use EBPs when teaching students with disabilities (Simpson et al., 2007). Therefore the teacher education authorities and school administrations must provide staff development initiatives about using EBPs to educate these students.

Significantly, it is often reported that teachers feel they are not trained to use EBPs to teach students with ASD within their classrooms (Garland, Garland, & Vasquez, 2013; Stahmer, Collings, & Palinkas, 2005). This statement confirms Loiacono and Allen's (2008) study, which reported that most teachers graduate with inadequate trainings in EBPs for teaching children identified with ASD. While the exact cause of this is not clear yet, a plausible reason may be a lack of content on EBPs related to ASD for courses undertaken in teaching education programs. More generally, this issue could be a result of insufficient opportunities to learn about EBPs through professional development or other initiatives.

Training teachers is critical to ensuring that EBPs are employed successfully when they are working with students with ASD. It is important that teacher education programs ensure that future teachers "are provided with the resources to accurately evaluate research to identify EBPs; provided with training on the accurate implementation of EBPs with fidelity; and provided with the tools to stay current with the growing field of research on EBPs" (Marder & deBettencourt, 2015, p. 10). Hence proper training and professional development are needed for both PS and in-service teachers working in the field of ASD to help in meeting the needs of these students in inclusive settings.

Canadian researchers have found that ongoing training may help to enhance teachers' knowledge and skills about EBPs in teaching students with ASD, and to reduce teacher stress (Leblanc et al., 2009). A qualitative study by Stahmer, Collings and Palinkas (2005) found that participants used both evidence-based and non-evidence-based strategies by combining and modifying students' personal and external factors to meet the specific needs of their students. Participants in their study had a desire to use effective teaching strategies for these students, but they lacked sufficient knowledge and understanding about EBPs. All participants conveyed their concerns on the lack of adequate training and preparation in this area.

Another study by Bain, Brown and Jordan (2009) reported comparable results with 351 teaching candidates who implemented interventions for students diagnosed with ASD without evidence-based approaches. Data from both studies implied a critical need for assessing teachers' skills and knowledge to prepare them more comprehensively for effective instructional practices for students with ASD (Bain et al., 2009; Stahmer et al., 2005). Furthermore, a study by Hendricks (2011) noted that special education teachers do not implement evidence-based approaches in teaching students with ASD at an acceptable level. Therefore a recommendation for improving the service delivery to all students with ASD, "by informing policy and directing and enhancing teacher professional development initiatives at the preservice and in-service levels" (p. 37), was reported.

Additionally, Morrier et al. (2011) found that teachers were creative and talented when trying to meet their training requirements for their students. Morrier et al.'s (2011) study also found that, even though teachers were trained through full or half-day didactic workshops (which only involved presentation of information and rationales behind different strategies), they had little exposure to hands-on practices on different strategies to meet the needs of heterogeneous groups of students with ASD. Hands-on experiences are important to understand the subtle strategies to teach these students effectively. Implementing EBPs for students with ASD may enhance opportunities for these students in a variety of ways (Hendricks, 2011). Thus, to enhance these students' fruitful accessibility to inclusive classrooms, it is imperative that teachers are skilled and knowledgeable in implementing EBPs.

Additionally, the emphasis on EBPs may be linked with teachers' self-efficacy (Jennett et al., 2003); however, knowledge about EBPs is not reliably practised in schools (Corona et al., 2017). In another overseas study, the strategies used to educate students with ASD showed that fewer than 5% of the participants used EBPs (Hess et al., 2008). Since teacher characteristics – for instance, education level, years of teaching and the nature of the classroom – are not predictive of EBPs (Morrier et al., 2011), research has called on teacher education to address the research gap related to teachers' ability to implement EBPs (Corona et al., 2017). The following section reviews teacher education and professional development

programs that may enhance teachers' scope in teaching students with ASD by applying a broad range of EBPs.

2.11 Teacher education and professional development initiatives

In Australia, many students with identified ASD conditions do not receive the relevant educational support (Australian Education Union, 2015). Therefore an increase in the provision of education is necessary to improve their educational outcomes (Australian Advisory Board on Autism Spectrum Disorders, 2010). In an overseas study by Barnhill, Sumutka, Polloway and Lee (2014), inconsistency was noted in the teacher education programs focusing on. They found that, even though institutions offered ASD-specific courses, they did not cover the topic in detail. This aligns with the findings of Scheuermann et al. (2003), who contended that teacher education courses devoted to ASD lacked breadth and intensity, although this may differ from one institution to another.

According to Swabey, Castleton and Penney (2010), teacher preparedness is the accumulation of knowledge, skills and understanding necessary for successful entry into the teaching profession. This may be achieved through university courses and programs or through professional development. Given the growing number of students with ASD in general classrooms, it is important that teachers are prepared and confident in accommodating these students successfully in their classrooms. However, it is noted that teachers and schools are generally unprepared to address the needs of students with ASD (Busby et al., 2012).

One recent study in Australia conducted by Coates et al. (2017) on ASD identified specific course content and structure in preparing PSTs and teacher aides in teaching students with ASD in inclusive schools. The course content data were collected from "university and teacher-aide training websites, program enrolment guides, and through direct contact with institutions in Queensland, Australia" (p. 65). While the researchers acknowledged that there were 10 universities that offered courses in inclusivity and disability, there was only one university that offered ASD-specific coursework. This university offered a nine-week program focusing on ASD. This was one of six courses that students had to undertake as a major in their special education program. The researchers also reported that students had to wait until their

third year to undertake these six courses with no field or practicum experiences. In other words, only theoretical knowledge was gained while studying these six courses. Furthermore, "each university appears to be addressing the phenomenon of ASD within the generic disability and inclusion courses offered however, to what depth remains unidentified" (Coates et al. 2017, p. 75). Accordingly, their study identified an urgent requirement for university academics to reform their curriculum to offer the most effective ways of preparing PSTs in educating students with ASD.

Moreover, studies outside Australia indicated that coursework offered during teacher preparation fails to provide specific knowledge about teaching students with ASD (Busby et al., 2012; Rodríguez, Saldaña, & Moreno, 2012; Scheuermann et al., 2003). Other literature examined demonstrated that teacher education programs do not prepare teachers adequately to accommodate the academic and behavioural needs of such students (Busby et al., 2012; Hemmings & Woodcock, 2011; Leblanc et al., 2009; Scheuermann et al., 2003; Shelton, 2013). Therefore, recommendations for the improvement of teacher education programs were suggested.

Even though the literature indicated that teacher education might help in teacher preparedness, some studies investigated other means of teacher preparedness that are explored in this section. In a study conducted by Condrey (2015), the participants never cited training as a basis for their preparedness, even though in the literature, a lack of training is blamed for low self-efficacy among teachers (Condrey, 2015). This may be because the specific training on teaching students with ASD is not enough, given their heterogeneous characteristics and the limited time to cover all aspects of ASD during the teacher education program. Moreover, Bruening and McCoy (2010) have stated that "the distinctive characteristics of individual students mean that general or broad-spectrum in-service about teaching approaches for those with ASD will not satisfactorily address student or teacher need for supportive intervention" (p. 5). Consequently, teachers must consider alternative pathways, such as PD, to enhance their skills in teaching students with ASD.

Additionally, in Condrey's (2015) study, the three factors that may influence teachers' beliefs about teaching students with ASD were: "(1) personal experiences with students with autism or other disabilities, (2) open communication with parents before and during inclusion, and (3) an established environment where all students

are accepted and respected" (p. 4). From this study, it can be concluded that teachers' preparedness and self-efficacy about teaching students with ASD depend not only on the training they receive, but also on their experiences, their liaisons with parents, and their view that all students are equally valued and respected.

Moreover, Liacono and Allen (2008) stated that ASD-specific specialised training is repeatedly lacking or insufficient in professional development programs, making it more challenging for teachers to enhance their skills independently. Receiving content knowledge about ASD may aid in developing feelings of preparedness and promoting positive self-efficacy (Swackhamer et al., 2009). Additionally, in research about middle school teachers it was proposed that ongoing training and professional development may help to increase teacher self-efficacy (Swackhamer et al., 2009). Ongoing professional development can include working with mentors or highly skilled teachers.

For instance, according to Garrett (2007), highly experienced co-workers are valuable professional development resources, since they have wide teaching repertoires. Other forms of professional development, in the form of either workshops or consultation, were found to be effective measures of self-efficacy (Gebbie, Ceglowski, Taylor, & Miels, 2012; Gotshall & Stefanou, 2011). However, according to Strong (2014), there a gap remained concerning "what is effective professional development for teachers who teach students with ASD" (p. 13), which could in turn increase teacher self-efficacy.

It is important to consider that university-based teacher education programs require considerable time and effort to impart appropriate pedagogical approaches (Mathews, 2017). Furthermore, it is a requirement that these pedagogical practices embrace curriculum and instruction for students identified with special needs, mainly those diagnosed with ASD (Mamlin, 2012).

2.12 Chapter summary

Teachers' perceptions about their abilities to teach successfully can be improved only if they are knowledgeable about ASD in general and hold positive attitudes towards the concept of inclusion. When teachers realise, they are competent in their beliefs and abilities, they feel motivated to meet the challenges faced in

inclusive settings and to support productive learning environments and leading to positive job-satisfaction. While the inclusion of students with ASD in inclusive classrooms can be rewarding, evidence has shown that novice teachers and even highly experienced teachers face a wide range of challenges in accommodating students with ASD in their classrooms. This could be owing to the severity and the uniqueness of ASD characteristics. Other reasons for the challenges could be teachers' lack of self-efficacy impacting on their ability to teach these students (Hoy & Spero, 2005).

To the best of the researcher's knowledge, no literature exists that has studied teachers' self-efficacy and preparedness in implementing EBPs for students diagnosed with ASD. However, an overseas study (Corona et al., 2017) reported that teachers felt that they were not trained to use EBPs to teach such students. This could be due to limited or no training in this area; therefore researchers have called for teacher education to assist in addressing the gap in teachers' ability to implement EBPs for teaching students with ASD (Corona et al., 2017).

Additionally, this literature review has shown that predominantly quantitative ways of using Likert scales have been used to measure teacher self-efficacy, and that the qualitative means of measuring self-efficacy have largely been neglected. In response, researchers have called for more qualitative approaches to measuring self-efficacy. This is to provide thick and rich descriptions of the data (Klassen et al., 2011; Kleinsasser, 2014; Tschannen-Moran & Hoy, 2001; Wheatley, 2005), which cannot be obtained through quantitative means. Moreover, it was also found in the literature that effective teacher education programs and professional development must be developed to improve teachers' skills and knowledge in relation to ASD-specific teaching. However, a significant gap was identified as being associated with the type of professional development that may be effective in educating students with ASD and that may increase teachers' self-efficacy and their effective implementation of EBPs (Strong, 2014).

Thus, it is essential that teacher education programs explore their PSTs' and RGs' opinions and beliefs about teaching these types of students with a more reflective approach (i.e., employing their self-reflections) to their practice. If such a method is implemented, these teachers will be able to moderate their earlier beliefs

about students with ASD, leading to more effective practice for the benefit of an inclusive classroom. Other than a reflective approach, it is important that teachers also understand the links among the academic, behavioural and social needs of students with ASD. According to Barned, Knapp and Neuharth-Pritchett (2011), PSTs may not only possess limited ASD-related knowledge, but also misinterpret the needs of these students within inclusive classrooms.

Leblanc, Richardson and Burns (2009) contended that professionals working with students with ASD must have a complete understanding of the complexity of the condition to help students to progress successfully in inclusive classrooms. Accordingly, it can be said that teacher preparedness can affect teacher self-efficacy for teaching students with ASD in inclusive classrooms (Shelton, 2013). In addition, a lack of preparedness may affect teacher self-efficacy (Lastrapes & Negishi, 2012; Leblanc et al., 2009; Swackhamer et al., 2009). According to Bandura (1997), teachers who feel that they are not prepared to handle low-achieving or challenging students are more likely to develop a poor sense of teacher efficacy, leading to poor classroom instructions and continued behavioural issues (Condrey, 2015).

Chapter 3 Conceptual framework

3.1 Chapter overview

While Chapter 2 of this doctoral thesis afforded a comprehensive exploration of the relevant literature that related to the phenomenon under investigation in this study, Chapter 3 provides an examination of the conceptual framework underpinning this research. In this study, the conceptual framework that was considered and that subsequently guided me to conceptualise the research involved Bandura's self-efficacy theory (Bandura, 1977, 1987 1997) as part of his social cognitive theory. Self-efficacy beliefs are "people's judgments of their capabilities to organise and execute courses of action required to attain designated types of performances" (Bandura 1986, p. 391). Given that Bandura's self-efficacy theory is generally based on an individual perspective, the current study contributes to new theoretical knowledge by specifically exploring PSTs' and RGs' perspectives about their self-efficacy and their preparedness in teaching students with ASD in inclusive classrooms through an exploratory, qualitative, case study approach.

It has also been noted that the global movement towards inclusive education has led to implications for new research about teachers' self-efficacy, with an expanding body of research in this area of need (Almog & Shechtman, 2007; Leyser et al., 2011; Malinen & Savolainen, 2012; Romi & Leyser, 2006; Soodak, Podell, & Lehman, 1998). Therefore, the understanding of teachers' self-efficacy and preparedness in teaching students with ASD is important from a theoretical perspective, since these aspects are associated with the behaviours and attitudes of teachers of students with ASD. In this chapter, I present the theoretical basis for this study by firstly exploring Bandura's social cognitive theory about self-efficacy, followed by the sources of self-efficacy theory. In this way, I present the conceptual framework of this study. According to Carroll and Swatman (2000), a conceptual framework provides the architecture for a research study whereby research themes are developed through the literature search and/or the researcher's personal and professional experiences.

3.2 History of teacher self-efficacy

The Research and Development (RAND) researchers were the first to measure teacher efficacy, using Rotter's (1966) work on the locus of control (Armor, 1976). The locus-of-control theory is defined as an "individual's perception that their actions are made based on external and internal factors instead of their own ability to choose an action" (Gordon, 2017, p. 39). Keeping this theory in mind, the RAND researchers measured teacher self-efficacy using the two questions (Tschannen-Moran, Hoy, & Hoy, 1998) shown in Table 3.1.

The RAND researchers found that the teacher's sense of efficacy had an impact on students' motivation and stress levels. It also had an impact on teachers' readiness to implement innovation and to stay in their career. Consequently, these two items (as shown in Table 3.1) became the foundation and inspiration to other researchers in the development of teacher efficacy instruments (Bhatia, 2012), and provoked other researchers to develop more comprehensive measures on teacher self-efficacy, as there were also concerns among researchers about the reliability of the two-item scale (Tschannen-Moran et al., 1998). As a result, Bandura (1977) identified self-efficacy as a "cognitive process in which people construct beliefs about their capacity to perform at a given level of attainment" (Tschannen-Moran et al., 1998, p. 203). The current study is based on Bandura's self-efficacy theoretical framework but uses a qualitative approach.

The following Table 3.1, adapted from Tschannen-Moran et al. (1998, p.208-209), shows the historical development of the teacher efficacy measures.

Table 3. 1

*The Historical Development of Teacher Self-efficac*y

Adapted from Tschannen-Moran et al (1998) and Tschannen-Moran & Hoy (2001).

Instrument	Structure	Example items
	Efficacy measures growing out of Rotter's concept of generalized expectancies of reinforcement	
RAND measure (Armor, 1976)	2 items on a 5-point Likert scale from "strongly agree" to "strongly disagree." Scoring: sum of the 2 item scores.	When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment. If I really try hard, I can get through to even the most difficult or unmotivated students.
Teacher Locus of Control (Rose & Medway, 1981)	28 items with a forced-choice format. Scoring: Half of the items describe situations of student success (I+), and half describe student failure (I-).	Suppose you are teaching a student a particular concept in arithmetic or maths and the student has trouble learning it. Would this happen (a) because the student wasn't able to understand it, (b) because you couldn't explain it very well? If the student in your class perform better than they usually do on a test, would this happen (a) because the student studied a lot for the test, or (b) because you did a good job of teaching the subject area?
Responsibility for Student Achievement (Guskey, 1981)	Participants are asked to give a weight percentage to each of the choices. Scoring: a global measure of responsibility, with 2 subscales: responsibility for student success (R+) and responsibility for failure (R-).	If a student does well in your class, would it probably be (a) because the student had the natural ability to do well, or (b) because of the encouragement you offered? When your students seem to have difficulty learning something, it is usually (a) because you are not willing to really work at it, (b) because you were not able to make it interesting for them?

Webb Efficacy Scale (Ashton, 1982)	7 items forced choice. Participants must determine if they agree most strongly with the 1st or the 2nd statement.	(A) A teacher should not be expected to reach every child; some students are not going to make it to academic progress. (B) Every child is reachable; it is a teacher's obligation to see to it that every child makes academic progress. (A) My skills are best suited for dealing with students who have low motivation and who have a history of misbehaviour in school. (B) My skills are best suited for dealing with students who are academically motivated and generally well behaved.
Teacher Efficacy Scale (Gibson & Dembo, 1984)	30 items on a 6-point Likert scale from "strongly disagree" to "strongly agree." Scoring: a global measure of teacher efficacy derived from the sum of all items. Tow subscales emerge from factor analysis: personal teaching efficacy and general teaching efficacy.	When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching. The hours in my class have little influence on students compared to the influence of their home environment. If a student masters a new maths concept quickly, this might be because I knew the necessary concept. Even a teacher with good teaching abilities may not reach many students.
Science Teaching Efficacy Belief Instrument (Riggs & Enochs, 1990)	25 items on a 5-point Likert scale from "strongly agree" to "strongly disagree"	I understand science concepts well enough to be effective in teaching elementary science. Effectiveness in science teaching has little influence on the achievement of students with low motivation.
Ashton Vignettes (Ashton, 1982)	50 items describing problem situations concerning various dimensions of teaching, including motivation, discipline, academic instruction,	Your school district has adopted a self-paced instructional program for remedial students in your area. How effective would you be in keeping a group of remedial students on task and engaged in meaningful learning while using these materials. A small group of students is constantly

	planning, evaluating and work with parents. Self-referenced: 'extremely ineffective' to 'extremely effective.' Norm-referenced: 'much less effective than most teachers' to 'much more effective than other teacher'	whispering, passing notes and ignoring class activities. Their academic performance on tests and homework is adequate and sometimes even good. Their classroom performance, however, is irritating and disruptive. How effective would you be in eliminating their disruptive behaviour?
Bandura's Teacher Efficacy Scale (n.d)	30 items on a 9-point scale anchored at 'nothing', 'very little', 'some influence', 'quite a bit', 'a great deal', '7 subscales: influence on decision making, influence on school resources, instruction, instructional efficacy, disciplinary efficacy, enlisting parental involvement, enlisting community involvement and creating a positive school climate.	How much can you influence the decisions that are made in your school? How much can you do to overcome the influence of adverse community conditions on student learning? How much can you get children to follow the class? How much can you assist parents in helping their children do well in school? How much can you do to get local colleges and universities involving in working with your school? How much can you do to make students enjoy coming to school? How much can you do to get students believe they can do well in school work?
Teacher's Sense of Efficacy Scale (TSES) (Tschannen-Moran & Hoy, 2001)	Two versions: a long version of 24 - item; and a short version of a 12- item. Includes nine-point Likert-type response scale with the options 1 (nothing), 3 (very little), 5 (some	Example questions included "To what extent can you use a variety of assessment strategies?" and "How much can you do to control disruptive behaviour in the classroom"

influence), 7 (quite a bit), and 9 (a great deal).

Tschannen-Moran and Hoy formed the Teacher Self Efficacy Scale (TSES) as shown in Table 3.1, which included three factors; (1) efficacy of student engagement, (2) efficacy in instructional practices, and (3) efficacy in classroom management. Researchers use this tool to measure teacher self-efficacy (Tschannen-Moran & Hoy, 2001). Tschannen-Moran and Woolfolk Hoy (2001) referred to teacher efficacy as "teacher's belief in his or her capability to organise and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p. 233) situated on Bandura's (1977) self-efficacy continuum. Moreover, according to Tschannen-Moran and Woolfolk Hoy the TSES instrument was reasonably valid and reliable and therefore could be used a as a useful tool to explore teacher self-efficacy (Cramer, 2014).

From all the evidence discussed above in relation to the historical development of the teacher self-efficacy scale, it is noted that quantitative approaches of using the Likert Scale to measure self-efficacy are in high demand. However, the current study is based on a qualitative case study approach to explore participants' perceptions of their self-efficacy in teaching students with ASD, which therefore contributes to the methodological and theoretical knowledge around measuring teacher efficacy. Even though the quantitative approach may be a useful means of collecting information on teacher self-efficacy, some researchers are concerned about the lack of comprehensive information collected on the phenomenon under investigation, as discussed in section 2.4 of chapter 2.

In recent years, researchers have questioned the validity and reliability of the existing tools to measure teacher self-efficacy (Gordon, 2017). Furthermore, Bandura (1997) confirmed that there is little to no statistical association between self-efficacy and locus of control. Therefore Bandura (n.d.) presented his own 30 item measure to measure teacher efficacy, as shown in Table 3.1. While Bandura's (n.d.) scale on measuring teacher efficacy was more conceptually specific and task-oriented, the teaching tasks contained within the scale have been criticised for not demonstrating normal teaching activities (Tschannen-Moran & Woolfolk Hoy, 2001).

Additionally, Bandura (1977) introduced the idea of self-efficacy as one's beliefs in one's ability to accomplish the desired outcome, and over the last several decades, a range of empirical studies has supported Bandura's (1977) association

between teacher self-efficacy and student achievements (Tschannen-Moran & Hoy, 2007). Moreover, even though research evidence supports the importance of high teacher self-efficacy leading to effective teaching and learning, relatively little is known about the sources of teacher self-efficacy (Gordon, 2017). Bandura (1977; 1997) identified four sources of self-efficacy: mastery experiences (prior achievement of any task); vicarious experiences (observation and role modelling); social/verbal persuasion (getting encouragement from others); and physiological and affective states, as discussed in Section 3.2.2 of this chapter.

The conceptual framework for this doctoral study has been informed by the literature and is also based on my personal experiences and interest in teaching students identified with ASD within an inclusive setting. The conceptual framework of the study is further guided by the overarching Social Cognitive Theory of Self-Efficacy, as postulated by Bandura (1977). Notably, an individual's perceived self-efficacy is not a complete judgment about themselves, and this would remain largely the same across all contexts. The self-efficacy of individuals can, therefore, differ across different circumstances and domains.

Figure 3.1 offers a visual representation of the conceptual framework for this doctoral study.

Interpersonal factors: e.g., Teacher efficacy, age, gender

Mastery experiences

Environmental factors: e.g. course work taken, previous contact with individuals with ASD.

Vicarious experiences

Teachers self-efficacy & preparedness in teaching students with ASD in inclusive classroom

Social/verbal persuasion

Physiological/ affective states

Teacher education programs lack syllabus – to better understand the teaching of students with ASD (Coates, Lamb, Bartlett, & Datta, 2017).

Teachers majoring in special education - positive attitudes towards inclusion of students with ASD (Chung et al., 2015; Park, Chitiyo, & Choi, 2010)

Pre-service teachers feel un prepared- insufficient training during teacher

Social contact– influence teacher self-efficacy.

Family, friends, media or worked as a volunteer with individual with ASD.

Being in constant contact with student with disabilities – improve teacher attitudes and self-efficacy (Royal & Roberts, 1987)

Behavioural Factors: e.g. experiences working with individual with ASD.

- Field experiences are necessary to promote self-efficacy among teachers of students with ASD (Busby, Ingram, Bowron, Oliver, & Lyons, 2012)

- Level of self-efficacy beliefs increases teacher gains more experience (Tschannen-Moran & Hoy, 2007)

Figure 3. 1. Visual representation of the conceptual framework

3.3 Sources of self-efficacy

3.3.1 Mastery experiences

According to the original work of Bandura (1997), "mastery experiences are the most influential sources of efficacy relevant information because they can provide the most authentic evidence of whether one can master what it takes to succeed" (p. 80). Wagler (2011) stated that, "within the context of teaching, an enactive mastery experience is the act of teaching by the individual" (p. 3). Bandura believed that mastery experiences are the prior successes and failures that individuals have experienced when judging their own abilities. Therefore each success attained in performing a given task can build confidence, whereas failures are generally likely to weaken it. Not surprisingly, the mastery learning experiences contribute to a powerful source of information for the teachers (Bandura, 1986). In the case of teachers and their roles within classrooms, the experiences that lead to success in teaching students with ASD conditions can strengthen their sense of self-efficacy beliefs.

Hence, a teacher's mastery experiences can be accomplished only through teaching in real-life situations, and through a set of persistent efforts without becoming discouraged. Previous research studies confirmed that mastery experiences in the mode of tutoring, observing and real-life teaching during field placements are valuable sources of self-efficacy for early career teachers in their areas of specialisation (Charalambous, Philippou, & Kyriakides, 2008; Fives, Hamman, & Olivarez, 2007; Knoblauch & Hoy, 2008; Mulholland & Wallace, 2001). Successful experiences in teaching students with ASD conditions contribute to their increased self-efficacy, whereas those teachers who experienced negative experiences feel less capable and prepared to teach these students. Therefore mastery experiences are critical in contributing to positive beliefs about the teaching capabilities of teachers in inclusive settings.

Additionally, it is important to develop more resilient self-efficacy beliefs where people experience and overcome obstacles through their perseverance (Bandura, 1997; Tschannen-Moran & Hoy, 2007). Furthermore, when teachers experience easy success that may lead to quick results, they feel discouraged when

confronted with more challenging tasks. Hence, developing resilient efficacy beliefs requires individuals to experience and conquer obstacles through perseverance (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2007).

3.3.2 Vicarious experiences

Vicarious experiences are another important influencing factor in relation to self-efficacy (Bandura, 1997). Vicarious experiences take place through observation of someone succeeding or failing. When the observers identify that the model performs the tasks well, the self-efficacy of the observers is increased, and they feel they can succeed as well. Bandura stated that "modelling from another individual is an effective tool for enhancing the self-efficacy of an individual during a vicarious experience" (as cited in Wagler, 2011, p. 3). On the other hand, if the observer sees someone failing in a task despite exercising persistent effort, it lowers the observer's self-efficacy. According to Mansfield (2012), "observing other teachers work successfully or demonstrating particular skills may shape an individual's view of their own capabilities" (p. 39). Therefore through vicarious experiences the observer identifies and gathers necessary information from the models to make judgements about his/her capabilities.

In the case of teaching students with ASD conditions, vicarious experiences may influence the teachers' self-efficacy during their teacher education, whereby PSTs and RGs could imitate and model their mentor teachers' teaching approaches and classroom management. Vicarious experiences influence teacher self-efficacy by "altering efficacy beliefs through transmission of competencies and comparison with the attainment of others" (Bandura, 1997, p. 79). Many research studies have provided proof that vicarious experiences play an important role in influencing self-efficacy (Bandura, 1986; Bandura & Menlove, 1968). Currently, teacher education programs incorporate vicarious experiences of observing mentor teachers and modelling and mimicking teachers during their PST education (Williams, 2014).

According to Wagler (2011), vicarious experiences "are a common component of preservice teacher education programs and occur during the preservice teacher's field experiences" (p. 2). During practicums PSTs observe and pick successful teaching strategies from their mentor teachers. Teachers' ability to teach

students with ASD improves with more vicarious experience, as they learn new techniques and strategies from their mentor teachers during practicums. Therefore practicum observation may influence their self-efficacy in teaching students with ASD in this case. Accordingly, teachers may be able to better judge their own skills, attributes, and approaches to teaching students with ASD.

3.3.3 Social and verbal persuasion

According to the original and the subsequent propositions of Bandura (1977; 1982; 1986), social and verbal persuasion is the third way in which self-efficacy can be developed. Verbal and social persuasion is often used to influence individual behaviour since it is simple to use and readily available (Bandura, 1977). It is the form of interpersonal support that is provided by colleagues or communities that may contribute to the self-efficacy beliefs of novice teachers (Tschannen-Moran & Hoy, 2007). Moreover, Sunjin (2010) has stated that "social persuasion is used as a further means of strengthening people's self-efficacy that they possess the capacity to achieve their goal" (p. 157). He has further mentioned that, for teachers, verbal persuasions may occur during talks, coursework, professional development and workshops, and by obtaining feedback from colleagues about their performance. Verbal persuasions inform teachers about their teaching tasks, which may help to influence their self-efficacy.

Additionally, Tschannen-Moran and Hoy-Hoy (1998) declared that verbal persuasion associated with teachers' self-efficacy is mainly accomplished by receiving positive feedback from a teaching mentor, supervisor, or colleague about the teacher's ability to educate students effectively. Persuasive feedback is critical for strengthening individuals' beliefs about their perceived self-efficacy by encouraging them to try harder to achieve good outcomes and to persevere to overcome any hurdles that may interfere with their progress (Bandura, 1982). Through social/verbal persuasions, teachers may also encourage and persuade their colleagues that they can perform teaching tasks successfully, which may further influence their self-efficacy beliefs.

Hence, through verbal persuasion teachers are encouraged to trust their abilities in teaching students with ASD conditions inclusively.

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3.3.4 Physiological and affective states

Physiological and affective states refer to the fourth source of self-efficacy identified by Bandura (1977, 1982, 1986). They involve how an individual interprets their physical and emotional responses to a given situation (i.e., the mood). According to Bandura (1997), the state of one's mood influences one's perception and performances. Thus, one way to change people's mood is to boost their self-efficacy beliefs by improving their mental state, reducing stress and/or any negative emotional, perception, or judgement (Wu, 2016). For teachers of students with ASD, this may be accomplished through adequate training, on-going professional developments and support, where applicable, in teaching these students in inclusive classrooms.

Moreover, teachers' sense of tension and stress in teaching students with ASD in inclusive classrooms is generally interpreted as a sign of their inability to teach confidently. On the other hand, the feelings of satisfaction or pleasure experienced from successful teaching increases teachers' sense of self-efficacy (Bandura, 1997). Generally, it can be said that self-efficacy is enhanced when an individual has a positive emotional state, while it decreases during a negative emotional state. Those special education teachers who feel challenged and deal with consistent concerns about stress while teaching students with special needs, including those with ASD, are likely to suffer from teacher burnout, leading to an increase in the teacher attrition rate (Billingsley et al., 2004). Moreover, teachers who suffer from excessive stress and anxiety may not have the necessary skills and knowledge to perform their teaching tasks successfully. Therefore, teachers feel more self-efficacious when they are calm and collected than when they are stressed. In general, self-efficacy increases through consistently successful outcomes and decreases with repeated failures.

This clearly applies to this research study (see Chapters 5), where it was found that teachers were stressed due to the challenges they face in the classroom, which may eventually lower their efficacy beliefs. Teachers of students with ASD may experience high levels of work-related stress, caused by factors such as applying new strategies to meet the needs of these students, dealing with their complex characteristics, and creating and executing IEPs. Work-related stress could also

include dealing with difficult parents and lack of support from teaching colleagues, schools administrations and other professionals who work with students with ASD in schools. Therefore all these factors may lead to lower teacher self-efficacy and higher levels of teacher burnout, which may eventually lead to higher teacher attrition rates.

In summary, the theory of Bandura's (1977; 1982; 1986) self-efficacy has important implications for teachers and their education programs and for the impact that it has on their students' achievements (Williams, 2014). However, the above four sources discussed are not enough to change self-efficacy beliefs completely. According to Bandura (1997), "information instructs perceived self-efficacy only when it involves cognitive processing and reflective thinking" (p. 79). Furthermore, Tschannen-Moran and Hoy (2001) stated that systematic research that examines how teachers' self-efficacy beliefs are developed and reinforced, and the impact that those beliefs have on students' achievement, "could provoke significant changes in the way teachers were prepared and supported in their early years in the profession" (p. 802).

Bandura (1997) indicated that mastery and vicarious experiences were the dominant factors that influence self-efficacy progression for early career teachers. There is no doubt that all teachers during their pre-service education programs undertake placements that enable them to experience and observe various teaching styles from mentor teachers and colleagues, which can in turn influence their beliefs about teaching students with ASD. According to the study of William (2014), "observations of various teaching styles and outcomes from teaching practice influenced their beliefs about teaching, teacher effectiveness, and teacher empowerment" (p. 191).

Bandura's Social Cognitive Theory of Reciprocal Causation can be used to explain the relationships among the variables leading to the PSTs' and RGs' self-efficacy, as related to the inclusion of students with ASD in inclusive classrooms. Further to the above four sources of self-efficacy, I considered the three-pronged model, which involves: action through behavioural factors, internal-personal factors, and environmental events (Bandura, 2001), as shown in Figure 3.3. Inter-personal factors such as age and gender were not considered in this study because other

researchers have found that age does not correlate with individuals' self-efficacy (Bandura, 1995; Hicks, 2012; Hoy & Spero, 2005; Jenks, 2004; Tschannen-Moran & Hoy, 2007; Voris, 2011). Moreover, given the qualitative nature of this study, the researcher's intention was rather to explore the voices of the participants to collect in-depth information about the phenomenon under investigation. Participants' gender was not considered in this study because all the respondents in this study were female. Past research evidence has also demonstrated that there is no relationship between male and female teacher self-efficacy beliefs within inclusive settings (Loreman et al., 2013; Tejeda-Delgado, 2009).

3.4 Social cognitive theory (SCT)

SCT is a learning theory that provides a basis for understanding, predicting, and altering human behaviours (Bandura, 1977). According to Bandura (1977; 1986; 2001; 2012), human behaviours are influenced by human agency, i.e., one's ability to make things happen through an interaction involving interpersonal, behavioural, and environmental factors, referred to as the Triadic Reciprocal Causation model, as shown in Figure 3.2.
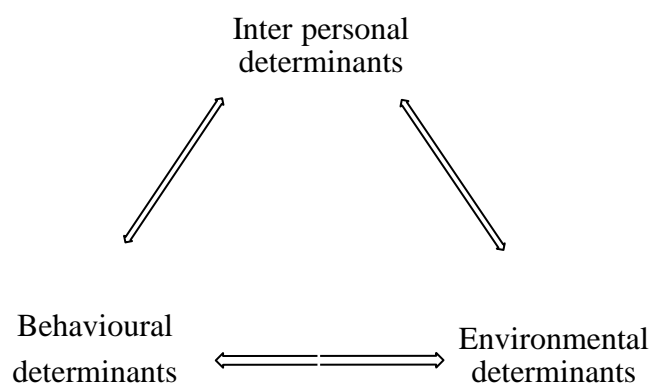
Figure 3. 2. Schematic of social cognitive theory (Bandura, 2012, p. 12)

Self-efficacy is seen as a constituent of intrapersonal influences in social cognitive theory. However, according to Bandura, the influence of each of these three factors may not coincide. In order words, one factor may be stronger or weaker than the others, so they do not equally influence each other. Based on this study, social cognitive theory states that behaviour is determined by a person's environment, personal factors, and previous and current behaviour in a process called

triadic reciprocal causation. According to Bandura (1986), individuals' goals, beliefs, and expectations may shape and guide their behaviours. In other words, how an individual behaves is dependent on what he/she thinks, feels, and believes.

Moreover, both internal and external factors may influence a person's feeling of self-efficacy in their ability to exercise human agency (Bandura, 1997). The Triadic Reciprocal Causation model can be used to consider how "teachers' actions, behaviours, and interpretations or judgments of the outcome influence future reactions and responses, creating a cyclical process in understanding actions and performance" (Williams, 2014, p. 30). This will help to understand the teacher's current perception about their self-efficacy in teaching students with ASD and how it can affect the future teaching and learning needs of such students. Also, the reciprocal interaction between an individual's environment and interpersonal factors, as well as any changes in the environment, will influence their behaviour and vice versa. Therefore through triadic reciprocal causation, the change in environmental factors (such as the type of coursework especially designed to teach students with ASD) may influence teachers' behaviours. In Figure 3.2, all three prongs operate by interacting in a bi-directional manner, and together they influence PSTs' and RGs' self-efficacy towards the inclusion of students with ASD.

3.4.1 Behavioural factors associated with levels of self-efficacy

Behavioural factors that may be associated with teachers' self-efficacy include experiences working with students with ASD. Busby et al. (2012) have stated that field experiences are necessary to promote self-efficacy among teachers of students with ASD. According to Hoy and Burke-Spero (2005), the novice teachers' self-efficacy beliefs are generally low, similar to those of PSTs in their initial year of university study. Their levels of self-efficacy beliefs increase as novice teachers gain more experience (Tschannen-Moran & Hoy, 2007). In a study of 992 PSTs, Leyser et al. (2011) recorded that teachers with experience in teaching students with diverse learning needs portrayed higher levels of self-efficacy than PSTs who had had no contact with such students.

3.4.2 Environmental factors associated with levels of self-efficacy

Environmental factors that may influence PSTs' and RGs' self-efficacy beliefs towards teaching students with ASD include the type of coursework especially designed to teach students with ASD and social factors (influence of family, friends and colleagues). Al Shammari (2006) pointed out that some teacher education programs lack syllabi that may help PSTs to understand the education of students with ASD better. Consequently, teachers develop low self-efficacy beliefs owing to limited training in this area.

3.4.2.1 The impact of coursework on teacher self-efficacy

Some researchers have recommended to include coursework about inclusion as part of PST education to develop teachers' self-efficacy beliefs about their ability to educate students with ASD within inclusive classrooms (Busby et al., 2012; Taliaferro, 2010). Research by Sharma and Sokal (2015) about the effects of a teacher education course on PSTs' beliefs about inclusion found that teachers felt more competent to teach in an inclusion setting after the completion of such a course. According to Park et al. (2010), PSTs majoring in special education demonstrated more favourable attitudes towards teaching students with ASD within inclusive classrooms than did those teachers who majored only in general education. Similarly, Chung et al. (2015) pointed out that teachers with special education qualifications hold positive attitudes towards students with ASD.

Since teacher education occurs at the preservice level, it is important to explore whether the nature of coursework is appropriately designed to influence teachers' perceived ability to educate students with ASD. Evidence has shown that PSTs continued to feel less prepared for inclusive teaching owing to insufficient training during their teacher education programs (Shadreck, 2012). Hence, data collected from this study will assist in the development of programs and professional development about teaching students with ASD.

3.4.3.2 The impact of social contact with students with ASD influencing teacher self-efficacy

Shelton (2013) has stated that there is a clear relationship between teacher attitudes and self-efficacy. People in constant contact with individuals with disabilities hold positive attitudes towards them (Thaver, Lim, & Liau, 2014).

Likewise, Rosenbaum, Armstrong and King (1988) pointed out that individuals with friends with disabilities hold more positive attitudes towards them than those without such friends. Therefore the kinds of exposure to children with ASD (for example through volunteer work, family members with ASD, or via colleagues, friends and media) may influence positive attitudes towards educating students with ASD.

3.5 Collective teacher efficacy

Over the past few years, teachers' self-efficacy has been proven to be a compelling construct concerning students' motivation and successful outcomes (Schunk & Meece, 2006). From an educational perspective, teacher self-efficacy is significantly linked to effective teaching practices through the potential use of innovative methodologies (Bandura, 1997; Tschannen-Moran & Barr, 2004; Tschannen-Moran & Hoy, 2001). Teachers with high self-efficacy believe that students with ASD conditions can be effectively taught in inclusive classrooms. They spend more time trying to improve their students' learning outcomes by implementing effective teaching strategies (Pendergast et al., 2011). Conversely, teachers with a low level of self-efficacy are likely to spend less time on students' academic achievements and implement rather poor teaching and learning strategies (Savolainen, Engelbrecht, Nel, & Malinen, 2012; Sharma, Loreman, & Forlin, 2012).

Traditionally, research on self-efficacy mainly focussed on the individual efficacy of teachers; however, according to Tschannen-Moran et al. (1998), environmental factors, such as "excessive role demands, poor morale, inadequate salaries, low status and lack of recognition" (p. 221), can weaken teachers' self-efficacy. According to Goddard, Hoy, and Woolfolk (2004), the school environment itself can lead to the formation of collective efficacy or "the judgment of teachers in a school that the faculty as a whole can organise and execute the courses of action required to have a positive effect on students" (p. 4). Collective efficacy beliefs are a "group's shared belief in its conjoint capabilities to organise and execute courses of action required to produce given levels of attainments" (Bandura, 1997, p. 477). Just like personal efficacy, collective efficacy can also result in setting goals, motivation, determination and perseverance with challenging tasks.

The specific application of Bandura's self-efficacy theory with PSTs and RGs working in inclusive classrooms, particularly in Australia, has been left unexplored. This study therefore aims to make a significant contribution towards theoretical knowledge on collective efficacy, whereby RGs' and PSTs' shared perceptions are analysed through a qualitative approach. Some teachers may find themselves surrounded by colleagues with low morale or having negative attitudes towards students with ASD owing to their extreme characteristics, which may negatively influence teacher's self-efficacy. Moreover, teaching students with ASD requires teachers to work together with parents, teaching assistants, learning support teachers, and other professionals (such as speech-language pathologists, psychologists, or occupational therapists) to changes the lives of students with ASD. Sharing ideas and resources as a group can help teachers to learn from each other and promote confidence and preparedness in dealing with students with ASD. Moreover, according to Dibapile (2012), "collective efficacy helps us to understand how working collaboratively with others can enhance a teacher's efficacy" (p. 83).

Additionally, exploring teachers' efficacy as well as collective efficacy is essential to understanding and predicting human behaviours, and in identifying methods to assess, modify, and change behaviours. Self-efficacy is based on a belief in human agency: where humans proactively commit to their development whereby, they can control the behavioural and environmental factors to enhance their learning outcomes (Bandura, 1986). Collective efficacy is thus considered as a critical motivational factor that may influence teachers' behaviours towards being committed in their careers, job satisfaction, and ability to engage students for positive learning outcomes.

3.4 Chapter summary

This chapter has described the conceptual framework of this doctoral study, which is based on Bandura's (1977, 1982, 1986) SCT theory of self-efficacy, which in turn guided me in undertaking this research study. In this chapter, I have discussed the historical development of measuring teacher self-efficacy. I also discussed the four sources of self-efficacy – i.e., mastery experiences, vicarious experiences, social/verbal persuasion, and physiological and affective states – and how they may

influence PSTs' and RGs' self-efficacy and preparedness in teaching students with ASD in inclusive classrooms.

I then presented the Social Cognitive Theory of Reciprocal Causation by Bandura. In this section, I also discussed the behavioural and environmental factors that may be associated with a level of self-efficacy. Notably, individuals perceived self-efficacy not to be a complete judgment about themselves, and this remained largely the same across all contexts. The self-efficacy of individuals can therefore differ across different circumstances and domains, and collective efficacy can also have an impact on individuals' efficacy and preparedness in teaching students with ASD. In the context of delivering good educational outcomes, self-efficacy is a powerful predictor of teachers' ability to educate their students. It has also been argued that teachers' sense of self-efficacy influences their performance in teaching and has an impact on their students' outcomes (Bandura, 1997; Hoy & Spero, 2005).

This study has made an important contribution to Bandura's theoretical knowledge of self-efficacy, where teachers can develop collective efficacy through support provided to them, and this can influence inclusion to take place. Collaboration and networking with colleagues may provide opportunities for teachers to collectively support students with ASD and to address any gaps in their preparedness, knowledge, and skills about dealing with such students. Additionally, when people who work will individuals with ASD lack collective efficacy or vision, achieving goals becomes impossible. Moreover, research evidence supports the notion that collective teacher self-efficacy is likely to contribute to teachers' sense of self-efficacy (Chong, Klassen, Huan, Wong, & Kates, 2010; Viel-Ruma, Houchins, Jolivette, & Benson, 2010). Viel-Ruma et al. (2010) found this to be the case irrespective of teaching levels, the setting of the classroom environment, or teacher qualifications. The next chapter of this thesis describes the detailed research design and methodology that were developed and applied during this study.

Chapter 4 Research design and methodology

4.1 Chapter overview

This chapter begins with the research paradigm and a discussion around ontology, epistemology and axiology, followed by the philosophical assumptions grounded within this study – i.e., the interpretivist framework of social constructivism. These are used to inform the research questions presented in Chapter 1, and to explain the appropriate research methods and data acquisition and analysis techniques for this doctoral project. According to Killan (2013), research is generally based on different sets of beliefs. To understand the contextual relevance of these beliefs, it is critical to explore and understand comprehensively the various components of the philosophical underpinning and the paradigm framing my research study.

This chapter includes this study's methodology and its justification in undertaking the research approach. The methods involved in the selection and recruitment of participants, the data collection techniques and the data analysis techniques are presented. Following this, the study's rigour and trustworthiness are discussed. Finally, the chapter ends by presenting the ethical and political dimensions of the study, taking into account minimising risks, maintaining confidentiality and informed consent.

4.2 The research paradigm

Chaudhary (2013) has stated that educational research comprises a variety of methods that are focused on student learning, teaching methods, teacher education and classroom dynamics. To implement these vital aspects, all research must be carried out in a rigorous and systematic way supported by relevant theories, a suitable paradigm and current practice. A carefully selected paradigm with a set of strategically designed procedures and rigorous data analyses is required to reach credible conclusions (Anderson & Arsenault, 1998). According to Willis (2017), a paradigm is composed of a "comprehensive belief system, world views or frameworks that inform research and practice" (p. 8). This often includes post-positivist, interpretivist, critical and postmodern perspectives, which are associated

with relevant theories of pedagogy, curriculum, assessment and professional growth for educational practitioners (Taylor & Medina, 2013).

According to Guba (1990), a research paradigm is characterised by its ontology, epistemology and methodology. Koul (2008) stated that paradigms are likely to reflect epistemological and ontological characteristics. Paradigm is synonymously termed worldview, which means "a basic set of beliefs that guide action" (Guba, 1990, p. 17). Worldviews are shaped by disciplines, research communities and mentors, and from previous experiences (Creswell, 2013b). Therefore ontology and epistemology can help us to create a comprehensive picture of how knowledge is viewed, how we establish our views regarding this knowledge, and the procedures that we need to adopt to extend this knowledge. The following subsections of this chapter are designed to discuss the elements of this study's research paradigm: ontology, epistemology, and axiology. Furthermore, the methodology is discussed in Section 4.3.

4.2.1 Ontology

Ontology is one's view of reality, which relates to the nature of the world and of human beings in social contexts (Bryman, 2001). Ontological philosophical assumptions pose pressing questions, such as "What is the nature of reality?" (Creswell, 2013a, p. 21). To answer this question, qualitative researchers must embrace the multiple realities around them and make suitable judgements about the exact realities that may apply to them. According to Creswell (2013a), "qualitative researchers conduct a study with the intent of reporting multiple realities" (p. 20). Multiple realities are presented using many forms of evidence, including direct quotations of participants and relevant themes to portray differing perspectives (Creswell, 2013a).

It is important to point out that the ontological position of this researcher is based on relativism. According to Guba and Lincoln (1994), relativism is the view that reality is largely subjective, and that it is expected to differ from person to person. Relativists believe that reality does not exist; instead it is constructed by the specific person whom it surrounds within a particular environment. Individuals are therefore able to construct their knowledge by engaging with the world in which they

live and through the interpretations of their experiences (Creswell, 2009). In this regard, realities can be conveyed through our own senses (Scotland, 2012) since, without consciousness, the world would be meaningless.

Considering the above, this study has been grounded within a relativist ontological position where relationships are portrayed as being subjective, resulting from an individual's experience, which includes the individual's views, opinions and interpretations instead of objective facts that can be verified or tested (Willis, 2017). This reesrach study considered the nature of reality through the lenses of the participants who were interviewed.

4.2.2 Epistemology

Epistemology is a branch of philosophy that investigates the origins, nature, methods and limits of knowledge, and it is often concerned with what knowledge is and the ways that it has been created, acquired and communicated (Cohen et al., 2007, p. 7; Scotland, 2012). In other words, epistemology is the study of what is knowable and what is worth knowing, whether it is factual or not, and how to gain this knowledge. When conducting a qualitative study to understand more fully how knowledge is created and is known, it is important to interact closely with the participants to gather data within their work environments (Creswell, 2013a). Such a strategy is likely to help in understanding the participants' views and opinions more deeply.

It is noteworthy that ontology is specifically about "being", whereas epistemology is about "knowing" (Basit, 2010, p. 6). As such, epistemology is driven by the ontological belief whereby the researcher believes that the nature of knowledge is subjective, and that it is socially constructed with multiple realities. The researcher's ontological and epistemological position is likely to influence the paradigm and the selection of an appropriate methodology and methods. According to Greenbank (2003), when researchers are deciding which research methods to adopt, they will inevitably be influenced by their underlying ontological and epistemological positions.

4.2.3 Axiology

While ontology and epistemology deal with truth, axiology addresses the nature of values and ethics. In research, axiology refers to "what the researcher believes is valuable and ethical" (Killam, 2013, p. 4). Axiology is referred to as value theory, which relates to the ethics, pragmatics and aesthetics of a given investigation (Kafle, 2011). In research, it is usually perceived that values facilitate the appraisal of epistemological and ontological claims. It may refer to the researcher's own values and opinions during the creation of knowledge (Kafle, 2011). The beliefs about what is ethical are then seen to underpin the researcher's paradigm, and to guide the researcher in making appropriate decisions (Laura, 2013). This is, in fact, very important, since the researcher's values are likely to influence how the research is conducted and what we value from the research outcomes. According to Creswell (2013a), there is little doubt that all researchers bring values to their studies. However, qualitative researchers are required to ensure that their values are known for a given study. As a qualitative researcher, I acknowledge the value-laden nature of this study, as well as the values and biases in the information gathered from the participants (Creswell, 2013a). Value-laden research choices are also driven by the individuals' beliefs and experiences (Easterby-Smith, Thorpe, & Lowe, 2002).

In conjunction with this study, my values, as the researcher driving the investigation, are guided by evaluating and understanding concepts of right and wrong behaviours while collecting data and analysing and reporting result outcomes. I am also likely to see my research as being successful when it has been useful in contributing to the existing knowledge about teachers' confidence and preparedness in teaching students with ASD, and when it is potentially translated into practice to assist teachers and students. This study is intended to benefit current and future teachers in understanding their abilities in teaching students with ASD, but also the whole community, including the parents and the children themselves.

I hold a firm belief in the moral values of respect, honesty and care for others. These values were paramount in the present study. For example, the participants in the study were treated with due respect since the interview transcripts were provided to them for their verification of the accuracy and completeness of the interview answers before they were analysed.

During every phase of the project, my values as a researcher were seen to resonate well with the core values of this research project: "equality, participation, community, respect for diversity and sustainability" (Booth & Ainscow, 2011, p. 21). It was therefore the primary purpose of this research design to support students with ASD equally in inclusive classrooms to generate an environment where there is a sense of belonging, and where students can actively participate in learning with the rest of the children in the class. There is little doubt that this can be achieved only if teachers are well-prepared and knowledgeable in operating with diverse groups of students, including those with ASD. Taking this into account, the choice of my research paradigm is addressed in the next subsection of this chapter.

4.2.4 The social constructivist paradigm

Following the above discussion about what reality is (i.e., ontology), how we can justify knowledge (i.e., epistemology), what values the researcher brings to the study (i.e., axiology) and the processes involved in the study (i.e., methodology, as discussed in Section 4.3 of this chapter), the philosophical assumptions grounded within this study were distilled from the interpretivist framework of social constructivism. In the realm of social constructivism, "individuals seek understanding of the world in which they live and work" (Creswell, 2013a, p, 24). In this study, the researcher has explored the world of human experiences and has relied on individuals' views of the phenomenon under investigation whereby multiple realities are likely to be constructed with subjective meanings. Furthermore, the researcher recognises that these realties are "co-constructed between the researcher and the researched and shaped by individual experiences" (Creswell, 2013a, p. 36). In this study, the only way for the researcher to understand multiple realities from the viewpoints of the participants in teaching students with ASD was to collaborate with them in a meaningful way.

This project required a paradigm that creates knowledge by constructing and interpreting humans' views. To this end, the interpretivist framework of social constructivism was mobilised to scrutinise the "participants' views of the situation being studied" (Creswell, 2003, p. 8). My main aim was to record subjective meanings by means of posing open-ended questions to the participants involved in this research study. The use of open-ended questions has helped me to listen

carefully to what the participants disclosed about what happened in their surroundings.

Given that the fundamental principle of constructivism is that reality is socially, culturally and historically constructed (Lincoln & Guba, 1985, 2000), the researcher recognises and acknowledges that her own background may shape the interpretation of the phenomenon under investigation, and positions herself in the research and acknowledges her own cultural, social and historical experiences (Bloomberg & Volpe, 2012). Importantly, a social constructivist researcher views the inquiry as being value-bound instead of value-free. In other words, the inquiry is generally influenced by the background of the study and of the researcher (Lincoln & Guba, 1985). This further suggests that no individual's values are incorrect, but that they are viewed differently based on their own circumstances. Values are also honoured and negotiated between individuals (Creswell, 2013a). This enactment of the interpretivist paradigm is also consistent with the qualitative research orientation, which is discussed in detail in the following section of this chapter, including the justification and suitability of this approach for my study.

4.3 The qualitative orientation of the research thesis

Following the above discussion related to the philosophical assumptions made by the researcher, a qualitative orientation to the research problem at hand was employed to collect and analyse data in this study. As the researcher in this study, my ontological and epistemological positions informed me to choose a qualitative approach for the research, given that my study aimed to explore individuals' in-depth experiences of the issues under investigation. To facilitate this process, I gathered a large amount of detailed information by communicating and interacting directly with the participants through qualitative means (Creswell, 2013a). Therefore a qualitative orientation to the study was appropriate whereby multiple realities highlighted by the participants were embraced during the data collection and analysis stages, in line with a social constructivist paradigm.

The use of the qualitative orientation was deemed necessary for my project, as it was designed to study the experiential lives of people (Polkinghorne, 2005, p. 138). Furthermore, according to Polkinghorne (2005), the primary aim of qualitative

research is to "describe and clarify experience as it is lived and constituted in awareness" (p. 138). Qualitative research emphasises exploring, discovering and describing the phenomenon under investigation.

The qualitative orientation of this study has helped the researcher to explore the participants' silent voices regarding their perceptions of teaching students with ASD. This is a useful way of exploring the issue rather than heavily relying on the literature or other sources to make a judgement. Domegan and Fleming (2007) stated that "qualitative research aims to explore and to discover issues about the problem on hand, because very little is known about the problem. There is usually uncertainty about the dimensions and characteristics of the problem. It uses 'soft' data and gets 'rich' data" (p. 24). Hence, the qualitative orientation of this study was intended to lay the foundation for future studies in this area of scholarship.

Furthermore, the essence of using the qualitative orientation provided a detailed understanding of the phenomenon under investigation from the participants' perspectives, whereby they were empowered to share their experiential stories without the influence of the researcher (Creswell, 2013a). Therefore a qualitative approach was suited for this research study, given that this approach "implies an emphasis on exploration, discovery and description" (Bloomberg & Volpe, 2012, p. 8) of the participants' views about teaching students with ASD.

Additionally, to the best of the researcher's knowledge, no research study was identified in Australia that specifically studied PSTs' and RGs' perceptions of their self-efficacy and preparedness in teaching students with ASD. Given that less is known about this issue, qualitative approaches were used to disclose and understand a phenomenon about which little was recognised or known (Corbin & Strauss, 2008). Creswell (2013a) described five approaches to qualitative research: narrative research, phenomenology, grounded theory, ethnography and case study. According to Creswell (2013a), case study-based research is composed of a qualitative approach in which the investigator aims to develop an in-depth description and analysis of a single case or a series of multiple cases (p. 104). The following section discusses the methodology employed in this research, including the qualitative case study approach, and the use of and justifications for the exploratory case study design of this thesis.

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4.4 Methodology

In a general sense, methodology refers to the development of the approach to designing and enacting the study, including data gathering and analysis, and how these approaches have been used in facilitating the research study. In other words, methodology is a tool to progress the research to achieve its aims and objectives and is defined by Harding as "a theory and analysis of how research should proceed" (p. 2). It is generally concerned with the "why," "what," "where", "when" and "how" information is collected, analysed and synthesised into an actionable set of outcomes. In reality, methodology often originates from the concepts of ontology, epistemology and axiology, and from the surrounding inquiries and issues around these concepts, and therefore aims to direct the question of how one is able to acquire knowledge (Guba & Lincoln, 1994).

In this project, a qualitative case study has been chosen as a methodology, which is based on a social constructivist worldview, whereby the researcher was able to engage with the participants in constructing the practical meaning of the phenomenon under investigation. In other words, a subjective, ontological worldview has been taken into consideration while adopting this qualitative approach, whereby reality is seen as socially constructed (Saunders, Lewis, & Thornhill, 2012). This was expected to lead to the construction of multiple realities (i.e., from various participants and their personal scenarios), which cannot be explained completely through a quantitative data analysis process (Johnson & Onwuegbuzie, 2004; Saunders et al., 2012). To gather information and to perform an in-depth inquiry about teachers' perceptions about inclusion and their self-efficacy and preparedness for teaching students with ASD, this study focused on the selected cases, i.e. final year PSTs and RGs.

4.4.1 The qualitative case study approach

As noted, this study adopted a qualitative case study approach to gather data, whereby in-depth information was collected from real people (i.e., with the individual participant as a case). According to Creswell (2013a), a qualitative case study approach involves exploring a real-life situation within a bounded system or numerous systems or cases, whereby detailed information is collected through

multiple sources e.g. by observing, interviewing, through audio-visual materials, and/or from verified reports). This information, once collected, is reported as "case description and case themes" (Creswell, 2013a, p. 97). According to Yin (2014), a case study is implemented to facilitate major contributions to knowledge derived from the participants and the related phenomenon that is being investigated. In the context of the present investigation, the phenomenon in this case study was the self-efficacy beliefs and preparedness of teachers in teaching students with ASD.

As a case study researcher, I ensured that each case (i.e., the individual participant) was selected based on their suitability to provide the most appropriate and consistent information (Stake, 1995), and that all such information was identified from the data that were collected and interpreted (Wainman, 2010). Additionally, a case study is naturally likely to be bounded by the available time and the place or context (Creswell, 2013a; Merriam, 1998). According to Yin (2014), there are five components of a case study research design: (1) a case study's research questions; (2) the propositions/purposes of the study; (3) the unit of analysis: (4) the logic that was used to link data with the proposition; and (5) the criteria for interpreting the data. These five components were implemented accordingly, and they have been discussed as follows:

1. A case study's reseach questions: these are the very first components in case study research. The research questions in this regard are listed in Chapter 1 of this thesis, which has focused mainly on the "what" type of questions, given the exploratory nature of this research (Yin, 2014).

2. The purpose of the case study: in this exploratory case study, the purpose of my research study was to understand pre-service teachers' and recent graduates' self-efficacy beliefs and preparedness in teaching students with ASD in maintream classrooms.

3. The unit of analysis: the unit of analysis is the basis of each case (Ponelis, 2015). In this study, each individual participant is a case. Thus, the unit of analysis in this study is the exploration of the self-efficacy beliefs and preparation of individual pre-service teachers and recent graduates.

4. The logic that links data with the proposition: this component of a case study foreshadows the data analysis process. While analysing qualitative data, the

researcher "plays" with the data and then reviews the outcomes for any promising patterns, insights or concepts that match the theroretical propositions of a case study (Yin, 2014, p. 132). Themes that emerge from the data then serve as key elements to answer the research questions of the case study.

5. The criteria for interpreting the data: this is the fifth component of a case study design that must address any rival explanations of the research findings (Yin, 2014). In this research, meanings were extracted from the outcomes to assertain recommendations for future practice and research (Dodge, 2011).

The study was also bounded by time (i.e., limited to the duration of my doctorate program) and the place or context, which included an Australian regional university. This case study research allowed me to explore and understand the phenomenon in greater depth. In many situations (such as the present study), a case study approach is used when a small geographical area is selected with a small number of individuals to conduct the study (Zainal, 2007). It is well-perceived that a case study is a comprehensive research method widely adopted in the social sciences and in education research studies (Gall, Gall, & Borg, 2007). In fact, nearly any topic of research or phenomenon within a qualitative research study can be investigated using a case study framework (Gall et al., 2007). For education research, such as the project pursued in this thesis, a qualitative case study is a highly suitable means of investigating a social phenomenon (Merriam, 1998).

According to Creswell (2013a), the types of qualitative case studies are differentiated by "whether the case involves one individual, several individuals, a group, an entire program, or an activity" (p. 99). The case studies are also categorised in terms of the purpose of the case analysis. To elaborate this idea, Stake (1995) stated that there are three types of case studies: single instrumental, collective/multiple, and intrinsic case studies. The single instrumental case study is when the researcher identifies an issue/concern, and then one bounded case is selected to demonstrate the depth of the issue. Collective case study is focused on one issue/concern, and then multiple case studies are selected to demonstrate the issue/concern (Creswell, 2013a). Finally, the intrinsic case study focuses on the case itself (e.g. assessing a program). Therefore, considering the above definitions, my

study logically fits in well with the instrumental case study approach, as I have investigated the phenomenon of self-efficacy beliefs and preparedness (i.e., perception/concern) of each participant as a separate case bounded within a single case study (i.e., one bounded case study).

4.4.2 The exploratory case study method and its justification

As the qualitative orientation of this research study is based on the social constructivist paradigm and relies on a subjectivist, ontological worldview where reality is socially constructed, an exploratory case study method has been adopted to explore and understand the participants' perception of inclusion and their self-efficacy beliefs and preparedness in teaching students with ASD. The choice of a suitable research strategy helps to pursue the research problem and it aligns with the purpose of the research study. Therefore, for the current study, the exploratory case study was deemed appropriate to fulfil the research aim. As a case study researcher, I was genuinely interested in the participants' stories and realities, and in interpreting and learning from them. Case study is a suitable design platform for exploratory qualitative studies as it can provide a detailed exploration of the cases operating within their natural settings (Lodico, Spaulding, & Voegtle, 2010; Rumrill, Cook, & Wiley, 2011).

According to Creswell (2013b), the use of the exploratory case study approach allows a preliminary investigation of a field of study where the research questions are not yet fully identified or devised, and where the data required for a hypothetical formulation have not been captured previously. Accordingly, an exploratory case study is relevant for acknowledging the researcher's flexibility in designing the research and collecting the data (Merriam, 2009). According to Yin (2014), there are three types of research questions designed for a case study: exploratory, explanatory, and descriptive. The fundamental categories of these questions include the question types of "who," "what," "where," "how" and "why." When research questions focus on the "what" type questions, these questions are generally exploratory in their nature, whereby the justification for using them in an exploratory case study is to develop suitable assumptions and suggestions to facilitate further inquiry. Examples of exploratory studies in general include: an exploratory survey, an exploratory experiment, or an exploratory case study.

The use of an exploratory case study approach helped me to seek an understanding of the phenomenon under investigation, and to clarify and explore what was happening. By contrast, the "how" and "why" types of questions, which were not able to address the research questions in this study, are linked with explanatory case studies, where the research methods used are explanatory case studies, histories and experiments. The use of the explanatory case study is to discover the relationship between distinct variables by means of quantitative and/or qualitative data, which can help in understanding the relationship of the variables in greater depth and breadth (Bogdan & Biklen, 2007).

Descriptive case studies also ask "who" and "where" types of questions, and are mostly suited for descriptive case studies and histories (Yin, 2014). A descriptive case study, on the other hand, seeks to describe an intervention/phenomenon and the real-life context in which it took place (Yin, (2014). This can be subjective according to the skills of the individual person and the phenomenon under investigation (Walliman, 2005). Considering the discussion of the three types of research questions presented in the preceding paragraph, an exploratory case study was deemed suitable for my research study. This was because the research questions used the "what" type of questions – for instance:

(1) What are the pre-service teachers' and recent teacher graduates' views of the inclusion of students with ASD?

Furthermore, an exploratory case study is recommended when there is limited research evidence available about a given phenomenon (Mayer & Greenwood, 1980), as was the situation in the present project. Accordingly, Yin (2014) has described case study as an empirical inquiry that examines a "contemporary phenomenon in great depth and is performed within its real-life context", mainly when the "boundaries between the phenomenon and the context are not clearly evident" (p. 13). Therefore, given that there was a lack of prior research available about the subject matter that I investigated, an exploratory case study fitted well, as in-depth information was collected from the participants to understand real-life experiences. Moreover, the use of an exploratory case study may help to identify research questions or strategies to be considered in future studies (Yin, 2014).

4.5 Site and participant selection

The participants in this study were final year pre-service teachers and recent graduates from an Australian regional university. Mostly in case studies, a non-probability sampling method is used to recruit the participants (Saheefa, 2014). There are several types of non-probability sampling procedures used by researchers. These include quota, convenience, purposive and snowballing sampling. However, in this study, a purposive sampling method was used because the participants were selected specifically to provide in-depth information.

According to Patton (2002), purposive sampling is used extensively in qualitative research for identifying and recruiting cases that can provide rich information according to the needs of the research design. Therefore purposive sampling helped me to identify and select the individuals who may have been knowledgeable, and who may have had some experience with the phenomenon of my interest (Clark & Creswell, 2011). In this study, I explored the phenomenon of self-efficacy and knowledge of teachers in teaching students with ASD; therefore my purposive sample consisted of pre-service teachers and early career teachers with some experience of teaching students with ASD.

In terms of the experience of participants, the RGs were generally expected to have between one and four years of teaching experience, whereas the PSTs were those teachers with a much lesser experience (i.e., they were the final year PSTs who had some experience in teaching students with ASD through a teaching practicum). However, the two groups of participants provided a rich dataset - both the experienced and the relatively inexperienced groups. The selection of these groups of participants provided different perspectives and views through the qualitative data that were collected.

Pre-service teachers (PSTs):

The PSTs were recruited through an online survey where they indicated their willingness to participate in an interview. After the appropriate permission from the Head of School was obtained, the survey was advertised on the course study-desk and on the university's Education Community Forum (now known as My Initial Teacher Education Website), which was a Moodle website designed for all students

in teacher education programs at the university. This website helped students to engage in professional development opportunities, and to find out relevant information about their teacher education program. Eight pre-service teachers gave their implied consent to participate in an interview by responding to the survey questionnaires.

Recent graduate teachers (RG)

RG teachers were identified from the university's alumni group. I was able to solicit appropriate participants with the assistance of the university's alumni association. The alumni participants were contacted through direct emails and telephone calls, and those who were willing to participate in the research were provided with a written information sheet and a consent form to sign (see Appendices B and C).

4.6 The data collection techniques

4.6.1 The interviews

In this exploratory case study research, semi-structured interviews were used to explore and help to seek rich and in-depth information about the teachers' lived experiences and knowledge of the phenomenon under investigation. According to Yin (2009), interviews are regarded as one of the most important techniques for data collection, given the guided nature of the conversations, which are not rigid and could therefore provide flexibility in the acquisition of beliefs about the phenomenon. Collecting data through interviews has assisted me to gather information provided by the respondents, and has enabled me to explore their intrinsic ideas (Wang, 2017). Other advantages of using interviews in this qualitative research were to provide direct and verbal interactions where firsthand experiences of the participants were captured, as well as allowing good interpretative validity through useful exploration and confirmation of the phenomenon under investigation (Johnson & Turner, 2003; Colen, Manion, & Morrison, 2011). While interviews carry merit with respect to qualitative case study design, it is also important to acknowledge the weaknesses and challenges of interviews, which are listed as follows:

- Interviewer bias and subjectivity;

- Expensive to pay for interviewees and time-consuming in data collection and analysis;

- Possibly low perceived anonymity by respondents (Cohen, Manion, & Morrison, 2011, pp. 411-412).

Additionally, the use of semi-structured interviews in this research enabled me to ask open-ended questions to explore the teachers' perception about inclusion of students with ASD, their self-efficacy, knowledge and preparedness in teaching such students in greater detail. The semi-structured form of conducting an interview is prevalent as it favours the flexibility of asking probing questions (Punch, 2009) to reveal detailed information for a better understanding of the phenomenon being investigated.

Additionally, through interviews, rapport and a level of trust are built between the interviewer and the interviewee, leading to a more relaxed environment and contributing to more sincere answers (Rabionet, 2011). Likewise, during the conversation, knowledge is constructed between the participants of the study and the interviewer (Kvale, 2007). Thus, in this study, knowledge was captured based on the interviewees' own words, thoughts, beliefs, perceptions, feelings and experiences (Taylor, 2005). Through interviews, the participants in this research study had an opportunity to deliver their own thoughts and feelings about teaching students with ASD in their own voices.

In this study, a telephone interview was conducted with each participant. Telephone interviews have been identified as an important technique of data collection, and are used frequently in research (Cohen, Manion, & Morrison, 2011). The participants in this study were separated from the researcher by geographical distance; therefore, the telephone interview was the most convenient way to contact them. It has also been reported that telephone interviews may increase participants' consciousness of anonymity (Greenfield, Midanik, & Rogers, 2000), and can help them to feel more at ease. Therefore interviewing by means of a telephone was a good choice for my research study as it helped in increasing the data quality (Sturges & Hanrahan, 2004).

The interviews with PSTs took place between Semester 3 2017 and Semester 1 2018, whereas the interviews with the alumni participants (i.e., recent graduates) took place between Semester 1 2018 and Semester 2 2018. The interviews in this research study were conducted for approximately 30 minutes each, to reduce the time imposition on the participants. However, within this period, enough data that were rich and in-depth from each participant had been received, so a follow-up interview was not deemed necessary. Nevertheless, the interview transcripts were provided to the participants to comment further or to elaborate on the information provided or to have the opportunity to add any remaining comments or views. According to Robson (2011), interviews that last over one hour can be significantly troublesome for the respondents, making them become uncomfortable; furthermore, it is sometimes challenging to meet the demands of the naturally busy participants. The researcher considered this while interviewing the participants, to ensure that the interviewees felt comfortable in providing in-depth and useful information for the research.

The themes of the interview's questions were selected carefully so that they related well to the research questions and the aim of this study. The researcher also ensured that the language used in the interviews was simple and understandable for the interviewees (Bryman, 2008). Prior to the interviews being recorded, the participants were phoned to discuss the purpose of the research project and the level of confidentiality, which, in fact, was part of building rapport and trust before conducting the interviews.

The next section of this chapter discusses the data analysis techniques used in the research.

4.7 Data analysis

4.7.1 Thematic analysis

In this study, thematic analysis was used to analyse and interpret the data collected from the semi-structured interviews. Thematic analysis is a technique employed within qualitative data acquisition and is an analysis approach used to recognise patterns and themes within those datasets. According to Braun and Clarke (2006), thematic analysis is learned first in qualitative approaches since "it provides core skills that will be useful for conducting many other kinds of analysis" (p. 78).

The rationale for using thematic analysis is that it is considered a novel method for extracting patterns and themes in the data rather than just a routine methodology (Braun & Clarke, 2006; Clarke & Braun, 2013). Furthermore, this method is flexible and is not bounded by a particular epistemological or theoretical dimension (Maguire & Delahunt, 2017). Given its flexibility, thematic analysis, as adopted in this study, can be used concerning different theoretical perspectives (Braun & Clarke, 2006), and it was very much suited to my research.

The main aim of this research, which utilised thematic analysis as a pertinent tool for the analysis of relevant information provided by the participants, was to explore teachers' perception of inclusion of students with ASD and their self-efficacy and preparedness in teaching these students. Therefore the thematic analysis technique was required to identify, analyse and report the patterns or themes within the interview data. In this study, the themes and patterns within the acquired data-set were identified by applying a combination of inductive and deductive approaches, which was in fact suggested by the nature of the qualitative data that were collected. That is, through thematic analysis, qualitative researchers attempt to recognise the themes that emerge from the data themselves, or by linking those data with an appropriate theoretical framework that describes the phenomenon under investigation (Fereday & Muir-Cochrane, 2006). At the same time, thematic analysis also helps to identify new themes and ideas that emerge from the data.

In this study, I followed the comprehensive phases of thematic analysis guidelines as presented by Braun and Clarke (2006). Their guidelines involve six distinct phases, ensuring that a thorough analysis and interpretation of the information are undertaken:

1. Familiarising yourself with your data
2. Generating the initial codes
3. Searching for themes
4. Reviewing the themes
5. Defining and naming the themes
6. Producing the report. (Braun & Clarke, 2006, p. 87)

In the data analysis process, it was noted that the process may not be a generally linear process, but instead may be more of a recursive procedure within a qualitative framework. Hence, while analysing the data, I ensured that I moved back and forth, from one phase to another, as was required in this recursive approach (Braun & Clarke, 2006). Furthermore, it was also realised that the guidelines for qualitative data analysis generally have no fixed rules; therefore the flexibility approach was applied to suit the research questions and the relevant data (Patton, 2002). Therefore, taking these important considerations into account, I followed the guidelines presented by Braun and Clarke (2006) during the data analysis phase. These are discussed below in greater detail.

Phase 1: Familiarising yourself with your data

Firstly, the interviews were transcribed into a written format. Then I checked the transcription against the original recorded version for its accuracy since the transcription of the recorded interviews was completed by a transcription company and not by me. After I had cross-checked the interview transcripts with the participants for accuracy, I became deeply involved in the written transcripts by reading them repeatedly to become familiar with the content of the data. Becoming immersed in the "repeated reading" and "reading the data in an active way" (Braun & Clarke, 2006, p. 87) thus helped me to search for relevant meanings and patterns in the dataset. At this stage, as I was exploring and reading the data, notes were taken and key ideas and concepts were highlighted to assist me to generate the initial codes that were used in the subsequent phases (Braun & Clarke, 2006; Maxwell, 2005). Additionally, as part of my repeated readings of each transcript, I then created a memo that was then entered in the NVivo software. This memo recorded my initial thoughts, and ideas that emerged as I read the respective transcript.

This is shown in Figure 4.1 below:

Figure 4. 1. An example of a screen capture of codes in the NVivo software

Phase 2: Generating the initial codes

During this phase, as the researcher, I began "coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code" (Braun & Clarke, 2006, p. 87). The initial codes emerged from these data, and assisted me to theorise and keep revisiting the data (Nowell, Norris, White, & Moules, 2017). As such, I was able to reflect on, understand better and think about the datasets (Savage, 2000), and I was able to organise them into meaningful categories (Tuckett, 2005). This assisted in performing relevant comparisons among the themes, and also helped to develop the associated theoretical concepts (Maxwell, 2005).

For the first few interview transcripts, I began with a line-by-line coding procedure, as shown in Table 4.1, followed by coding the data into a set of chunks. This was done to identify as many codes and patterns as possible, to avoid missing out on some interesting ideas presented by the interview participants. Given that line-by-line coding was extremely time-consuming, as expected, it was applied only at the beginning of the data analysis process (Bazeley, 2013). Later, when the patterns and themes emerged, there was no need for a line-by-line coding procedure. Initially, I began coding manually, before transferring the data to NVivo 12 software to help to organise and manage them. This also helped me to create themes and to search for relevant data in a more efficient manner.

During the initial generation of codes for the relevant themes, I came up with a significant and diverse number of codes, which then assisted me to search for the main themes and to narrow down the number of options. Additionally, the use of the NVivo 12 software helped me to save time, provided a comprehensive approach, and enabled a more in-depth and efficient analysis during the later stages of data analysis. Importantly, I should reiterate that, for accuracy and greater validation, the interviews were first coded manually and then transferred to the NVivo software.

This dual approach helped me to store the data electronically, and to manage and organise the data in a much more efficient manner

Table 4. 1

An Example of Line-By-Line Coding

Text	Description	Coding
Interviewer: Can you describe your experience in teaching students with ASD?		
Interviewee: Yes, well, when I began my teaching career, I started as a relief teacher, which very soon entered into a contract in a Prep classroom, which I took over in Term 2. There was a student in that classroom with ASD, quite I guess you would say [a] severe case. So I was just thrown in with very minimal instruction. The teacher was leaving, and that was my first experience ever teaching a child with ASD.	Contract teacher – new graduate Had a student with ASD in class Student had severe ASD Minimal instruction given First experience ever in teaching student with ASD	**Limited experience**

Interviewer: Okay, so generally how do you feel about teaching students with ASD in a inclusive classroom?

Interviewee: Well, that first year with that particular boy was quite challenging. It was quite - I guess it was a learning experience, a learning curve. It was - he was quite disruptive to the class and to the other students and, you know, initially I found it quite difficult. But, once I got into the swing of it, I guess you would say, and did a bit more research myself, then the following year, then I had another parent request me to have a child with ASD and I've - I don't know.

Again it does depend on severity. I did find the first child - as I said, it's difficult for the other children, particularly when, you know, there's a lot of yelling

Quite challenging experience	**Challenges in managing behaviour**
Learning experience	
Learning curve	
Student disruptive to the whole class	
Difficult to manage initially	
Further research and experience helped	
Confidence depends on the severity	**Teacher's confidence depends on the severity of the ASD**

and screaming and, you know, throwing his stuff on the floor and we're having to pick him up and things like that.	Dealing with behavioural issues can be challenging Difficult for other students

Table 4.1 shows how line-by-line coding was conducted based on the transcript of the interview with one of the participants. The first column of the table shows the text from the interview transcript, the middle column shows the initial concepts that emerged from describing that text and the last column shows the initial coding that I found relatively interesting, informative and inclusive, based on the description. During this process, I generated the initial codes that were then condensed into a set of broader themes to address the research questions framing this thesis.

As a further note, this approach not only provides a detailed account and an in-depth analysis of the qualitative data collected during the project phase but also empowers researchers to become immersed in their participants' worldviews, mainly to control their own assumptions about the data (Charmaz, 2014). Hence, while conducting the line-by-line coding approach, I was able to construct new knowledge by interpreting the participants' views in the realm of the social constructivist paradigm. In this manner, I was able to understand multiple realities, deduced from my data, largely from the viewpoints of the participants in teaching students with ASD. In doing so, I was not attempting to make or privilege my own assumptions about the phenomenon.

Phase 3: Searching for themes

A search for the themes began once I had coded appropriately and collated a long list of codes from the previous phase. During this phase, I focused on the analysis at a much broader level, and the initial sets of themes were developed in this way. This process involved "sorting the different codes into potential themes and collating all the relevant coded data extracts within the identified themes" (Braun & Clarke 2006, p. 89). In other words, I used the initial codes from the previous phase to synthesise the overarching themes and to make them broader and more inclusive.

In identifying the relevant themes, I paid careful attention to the questions that were posed about teachers' self-efficacy in teaching students with ASD within inclusive classrooms, particularly in relation to teacher education, teacher preparation and the challenges faced in teaching students in an inclusive manner. Furthermore, an abductive analysis was chosen to identify the relevant themes because of its

flexibility, and because it was well-suited to my research study, given that little is known about teachers' confidence and preparedness in teaching students in inclusive classrooms in Australia. According to Aukeala (2017), abductive analysis is chosen for a research study when the "phenomenon under study is somewhat unknown and new. For that reason, the purpose is not to test an existing hypothesis" (p. 26). Additionally, abductive analysis is similar to both deductive and inductive coding, whereby the deductive approach to data analysis is hypothesis-driven, and the inductive approach is more exploratory in nature, whereby themes are derived from the data themselves (Bernard, 2011). In this thesis, a combination of these approaches was used to analyse and interpret the qualitative data.

Additionally, during this phase, I created mind maps and tables as valuable tools to assist me in organising the codes into a set of themes by using suitable visual displays. I referred also to the memos that were initially created to assist me in deciding the themes and subthemes. Figure 4.3 shows how the initial themes were displayed as a mind map, showing the parent-codes linked with the child-codes. In NVivo, codes are also referred to as nodes, which is a collection of specific themes or areas of interest. The codes are organised in hierarchies, moving from the top parent-code, which consists of general topics or themes, to the more specific themes called child-codes. Later, the child-nodes were merged into parent-nodes to produce more inclusive/broader themes depending on their relationships. I followed the same process with other codes as well, and I kept changing and merging the codes frequently to restructure the themes more logically as new ideas and concepts emerged through the subsequent data analysis process. Further to this approach, the relevant codes were also organised into a parent–child relationship, which is referred to as the hierarchical organisation of codes in NVivo terms (Kriukow, 2017).
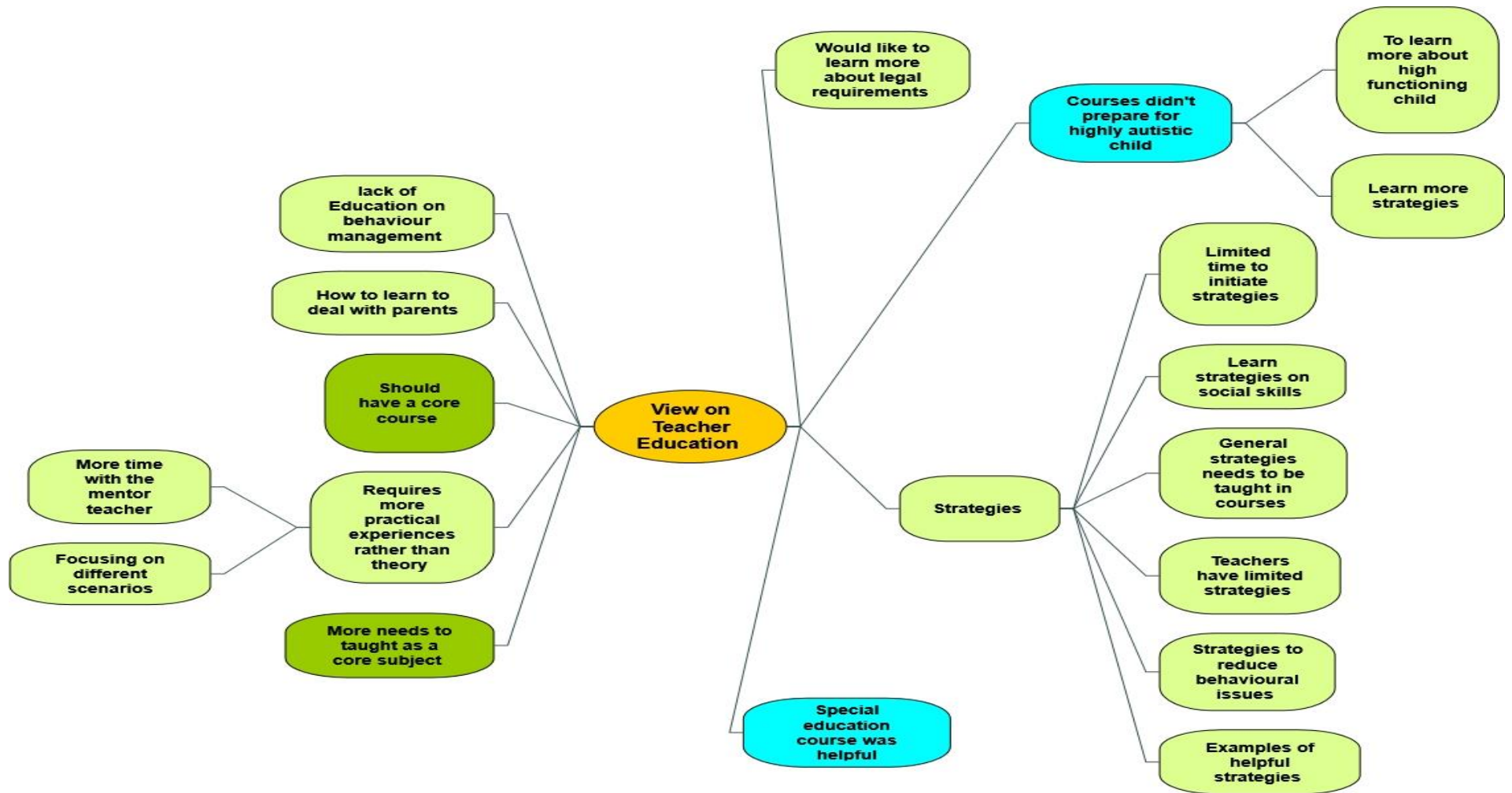
Figure 4. 2. Visual of a mind map with relationships among initial codes

Creating a mind map-based model, such as the one schematised in Figure 4.2 assisted me in visualising the relationships among codes, which then helped me to communicate the findings more clearly. This was achieved through brainstorming the codes to create new ideas and concepts. In accordance with Figure 4.2, I began with a central idea – for example, *Views of teacher education* – then I decided to map other connecting ideas that were related to that central idea. A few examples of these *idea*s were *special education course was helpful, require more practical skills than theory, courses did not prepare for highly autistic children and teaching strategies.* I used connectors and shapes to link these ideas with the central idea.

This parent–child relationship is displayed in Figure 4.3. According to Kriukow (2017), "classifying the codes into this type of relationship was used for the purpose of sorting, and gaining a deep insight into the data" (p. 95). At this stage of the data analysis process, I also came across some codes that were named as "floating codes," or as "miscellaneous codes," as they did not seem to have any relationship with the themes. Therefore, these codes were considered less relevant and discarded from the main results, while keeping them as outliers.

Figure 4. 3. The organisation of initial codes into parent-child relationship

In Figure 4.3, the child-codes were merged into the parent-code to be able to synthesise all information into an inclusive theme and thus to construct new meaning from these data. For example, *Teachers don't know what to do* and *Difficulty managing behaviour and engaging highly functioning students with ASD* were merged into the code for *Challenges faced by teachers.* Additionally*,* the code *Support influences confidence level* was merged with the code *Confidence in teaching students with ASD.* These mergers were necessary to ensure that a coherent idea was constructed to properly explain the phenomenon under investigation in the most concise, logical and informative manner.

During this process, I had to follow several iterations of the codes and relevant themes to ensure that the organisation of the codes was based on conceptual similarities and to provide further insight into data analysis. Furthermore, keeping a record of the initial development of how the data were created in the NVivo software, as was shown in Figure 4.3, was an important part of the general audit trail of my research study.

Phase 4: Reviewing themes

This phase involved reviewing and refining the themes to ensure that there was a coherent pattern. During this phase, I realised that some of the themes that I had initially coded were not really themes, as there were not enough data present to support them; therefore these themes were not reported. On the other hand, some of the themes that sounded similar and had the same ideas within them were collapsed or merged into one another. In this way, two separate themes became one single theme (Braun & Clarke, 2006). Furthermore, some of the child-codes were eventually combined into parent-codes so that they could be more inclusive depending on the child-code and the parent-code relationship (Kriukow, 2017).

Accordingly, I realised that the number of thematic categories was becoming smaller through regularly changing, merging and restructuring these themes, and by adding new and more important themes. At this stage, my only aim was to focus on some of the interesting aspects that emerged, and how and why they fitted together as a single theme, in order to more effectively explain the phenomenon under investigation.

Phase 5: Defining and naming themes

This phase involved capturing the essence of what each theme portrayed and what facet of data it captured. Moreover, a thorough analysis was conducted to identify the story that each theme communicated. It was important to consider how well the theme fitted into the broader overall 'story' that was conveyed in the data in relation to the research question/s, to avoid too much overlap between themes (Braun & Clarke, 2006, p. 92). Furthermore, as I continued to refine, I included sub-themes within broader themes. This was particularly important since it gave structure to the broader theme by showing the hierarchy of essence portrayed within the interview data (Braun & Clarke, 2006). During the final stage of this phase, I produce a thematic map showing the overarching themes and the sub-themes, as shown in Figure 4.5. I ensured that the names given to the themes were concise and effective to give the reader an immediate impression of what each theme was about (Braun & Clarke, 2006).

Teacher education and preparedness

- Inadequate teacher education
- Core subject/course about ASD
- More hands-on experience/practical rather than theoretical

Support is important

- Support influences confidence
- Support depends on the severity of ASD
- Teacher aide support

Inclusion: Teaching students with ASD

- Understanding of inclusion
- Concerns about inclusion

Confidence

- Confidence in addressing academic, social and behavioural needs
- Evidence-based practices

Challenges faced by teachers

- Managing behavioural issues
- Engaging students
- Limited strategies

Figure 4. 4. The thematic map and the relationship between themes

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Developing a thematic map, such as the one shown in Figure 4.4, was helpful in visualising a summary of the collected data. In this figure, one can easily note that there was a central point (*Inclusion: Teaching students with ASD*) that cohered around four branches. These branches were *Views about teacher education, Confidence, Support is important, and Challenges faced by teachers*. I realised that these were like overarching themes, like the spokes of an umbrella, where different sub-themes were developed and listed as shown above. Developing a thematic map like this also helped me to consider the relationships between themes and how they influenced one another.

Phase 6: Producing the report

As the final stage of data analysis using thematic analysis, a final report was presented as the thesis write-up. During this phase, I ensured that the analysis provided a "concise, coherent, logical, non-repetitive and interesting account of the story the data tell within and across themes" (Braun & Clarke, 2006, p. 93), with enough data evidence being provided to support the themes. Therefore, during this phase, the data described included meaningful examples of participants' direct quotations that illustrated their self-efficacy beliefs and their views about teaching students with ASD.

In summary, data were collected from 16 participants during the semi-structured interviews. These interviews were analysed using thematic analysis. This analysis involved six phases that were adapted from Braun and Clarke (2006). Further investigation of each case, as part of my data analysis, meant that I also conducted within-case analysis and cross-case analysis. This approach was chosen to allow for in-depth analysis to understand the phenomenon more fully under investigation.

Additionally, as the underlying philosophical framework of this study was based on social constructivism, I used this framework to examine and understand the participants' perceptions of their preparedness and confidence in teaching students with ASD through interacting with them. Hence, my goal was to rely on the participants' views of the phenomenon and to create subjective meanings of the

reality, rather than imposing my own assumptions on the data collection and data analysis.

The approaches to within-case analysis and cross-case analysis are discussed below.

4.7.2 Within-case analysis and cross-case analysis

4.7.2.1 Within-case analysis

To finalise the broader themes in this study and to promote deeper understanding of individual cases about teaching students with ASD, the within-case analysis approach was considered essential. Within-case analysis involved analysing each interview transcript separately. This was done to treat each individual participant as one case, and to make sense of the data collected from each individual unit (Bazeley, 2013). After going through each individual case, I created visual models representing all the codes that emerged from each participant. In other words, these models included the individual participants' voices that made "connections between various concepts, [and that] provided insight into the meanings that each participant attributed to a given phenomenon or concept, as these meanings differed across the participants" (Kriukow, 2017, p. 97). Hence, it allowed me to become more familiar with each interview case, and to identify an initial list of codes based on participants' voices in teaching students with ASD in inclusive classrooms.

Furthermore, these models were created automatically in NVivo 12 software and, when any changes were made to the codes and their relationships, they were updated automatically (Kriukow, 2017).

Figures 4.5 and 4.6 show examples of the models created to visualise one of the participants' interview data.
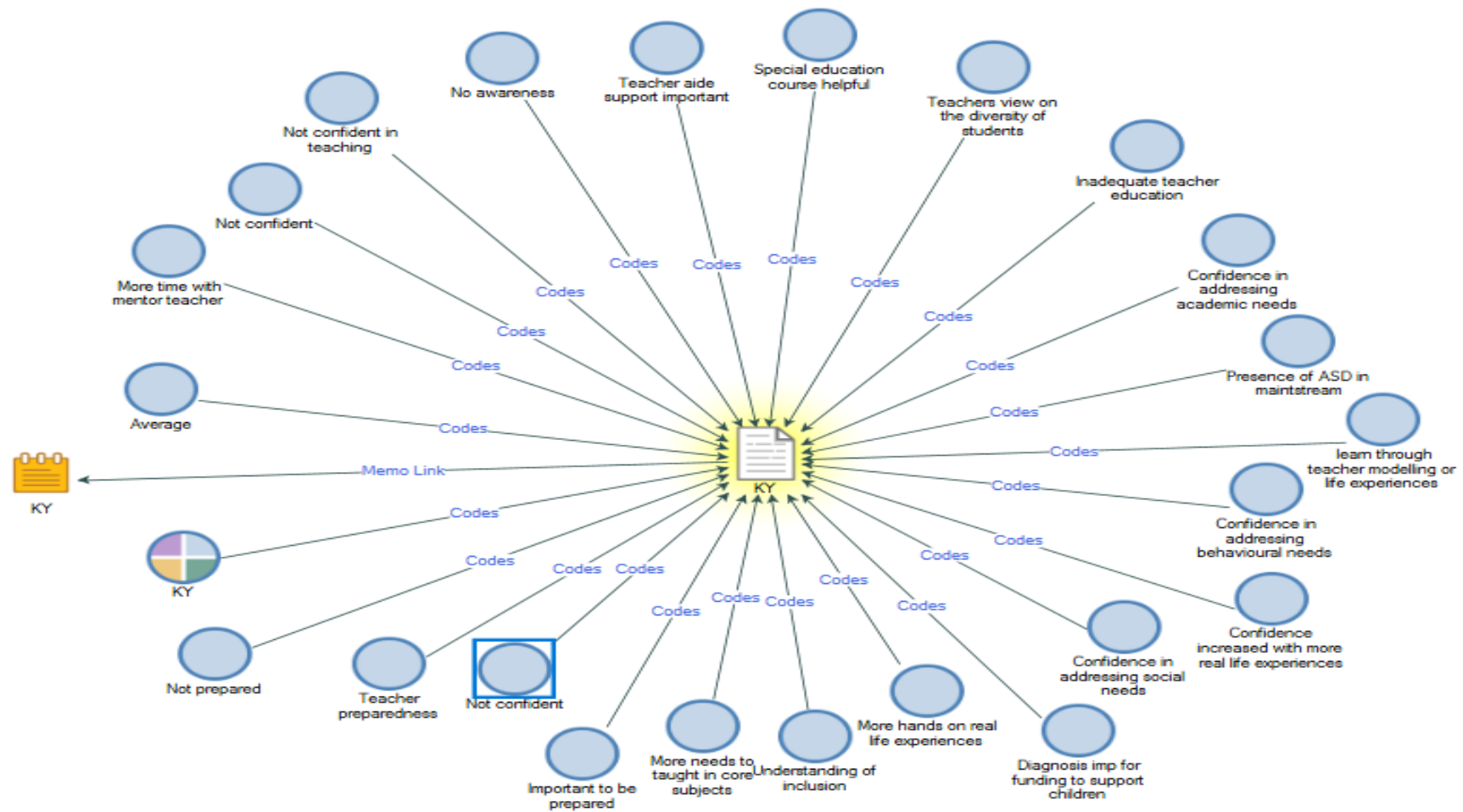
Figure 4. 5. An example of codes that emerged from an interview (Kaylia)

In Figure 4.5, the case of Kaylia (pre-service teacher) is explored. This shows what main ideas were coded for the case. Notably, some of these codes were merged into one broad theme in the latter part of the analysis. During this phase, I was able to explore in detail what this participant was trying to convey. For example, in this interview some of the main ideas were about *Confidence in addressing behavioural, academic and social needs, Not prepared* and *Special education course was helpful*. In a similar manner, I created equivalent coding charts for the rest of the participants.

NAME: Summer
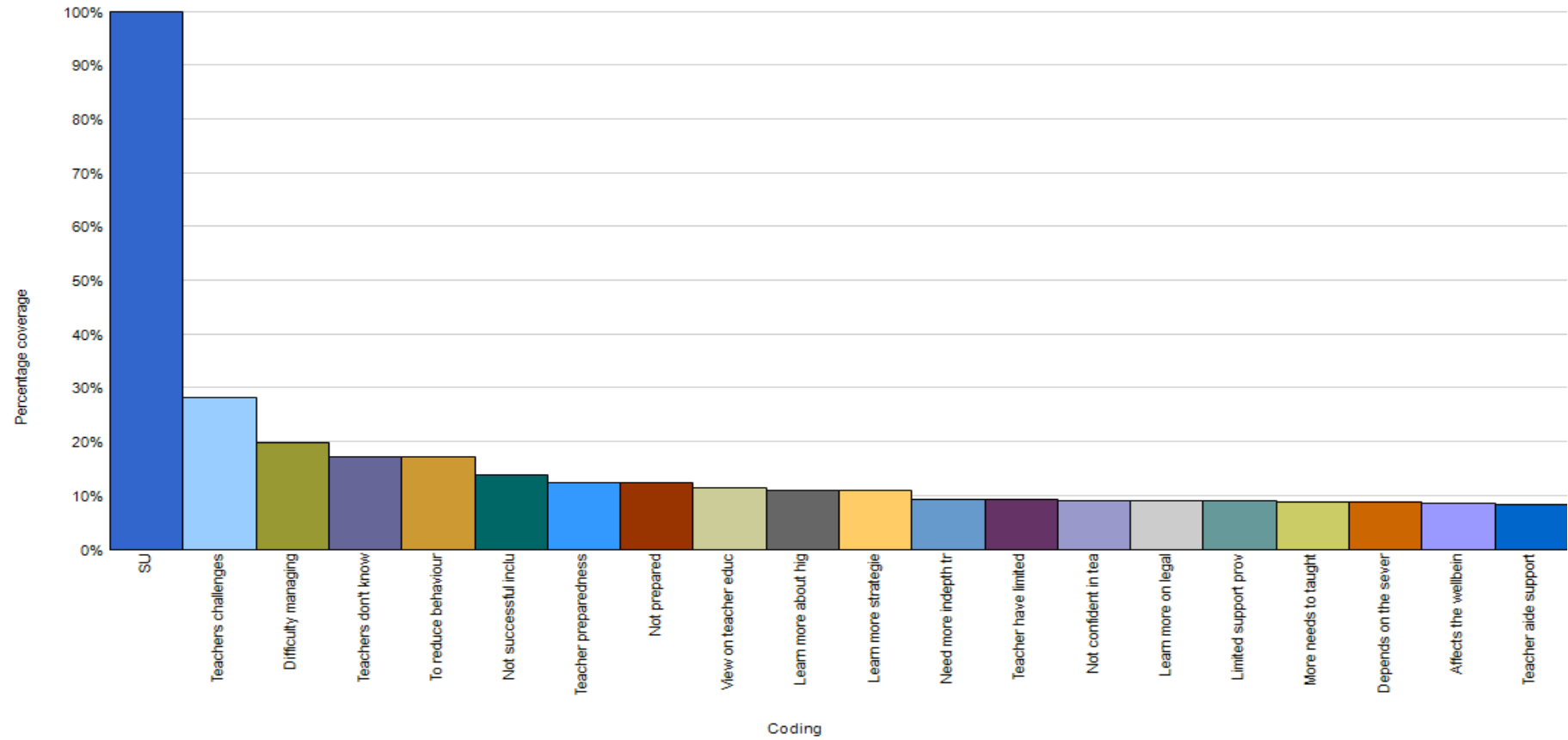
Figure 4. 6. An example of the frequency of codes in an interview

Additionally, I created coding charts for each participant for a deeper understanding of her or his perceptions of teaching students with ASD, as shown in Figure 4.6. The chart displayed the codes for each individual participant and "the percentage of the data that these codes covered" (Kriukow, 2017, p. 99). This was particularly important in helping to understand which issues were frequently mentioned by the individual participant and to what extent, and how important they were to that participant.

According to Kriukow (2017), using these approaches of within-case analysis contributes to a thorough interpretation of each participant's responses before comparing those responses with other participants' accounts. Additionally, Bazeley (2013) has stated that the comprehensive process of within-case analysis establishes the foundation for further stages of the analysis process, which involves comparing the data from each case. Therefore, after examining each case independently, I progressed to the cross-case analysis, whereby the analysis was conducted between these cases. The following sub-section discusses how cross-case analysis was conducted in this study.

4.7.2.2 Cross-case analysis

The cross-case or multi-case analysis in this research study was used to capture the patterns of pre-service and graduate teachers' confidence and preparedness in teaching students with ASD across all cases. The process of cross-case analysis assisted me in identifying trends and patterns within and across the cases more deeply and clearly. Hence, this process was an extension of comparative analysis, which I had already conducted while doing the within-case analysis. Although I realised that there were similarities of themes that had already emerged during the initial stage of the analysis, the main aim of this process was to explore the relationship and patterns to identify if any differences existed across all cases.

Miles and Huberman (1994) expressed the purpose of multiple-case (cross-case) analysis as follows:

One aim of studying multiple cases is to increase generalisability, reassuring yourself that the events and processes in one well-described setting and are

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not wholly idiosyncratic. At a deeper level, the aim is to see processes and

outcomes across many cases, to understand how they are qualified by local

conditions, and thus to develop more sophisticated descriptions and more

powerful explanations. (p. 172)

Accordingly, in this research study, cross-case analysis was conducted using the NVivo features of matrix coding query and crosstab. Matrix coding was a useful data exploratory feature that assisted me in examining any new understanding and any associations of patterns in the relevant codes. It also helped me to see how many and which of the cases had one or more nodes, and then enabled me to review the text in those nodes on a case-by-case basis (Bazeley & Jackson, 2013). At the same time, I was able to scrutinise which areas within the cases conveyed the same meanings, and where they differed. I also considered the crosstab approach to examine the spread of coding across pre-service teachers and recent graduates.

Figures 4.8 and 4.9 show examples of how I conducted cross-case analysis using matrix coding and the crosstab approach.
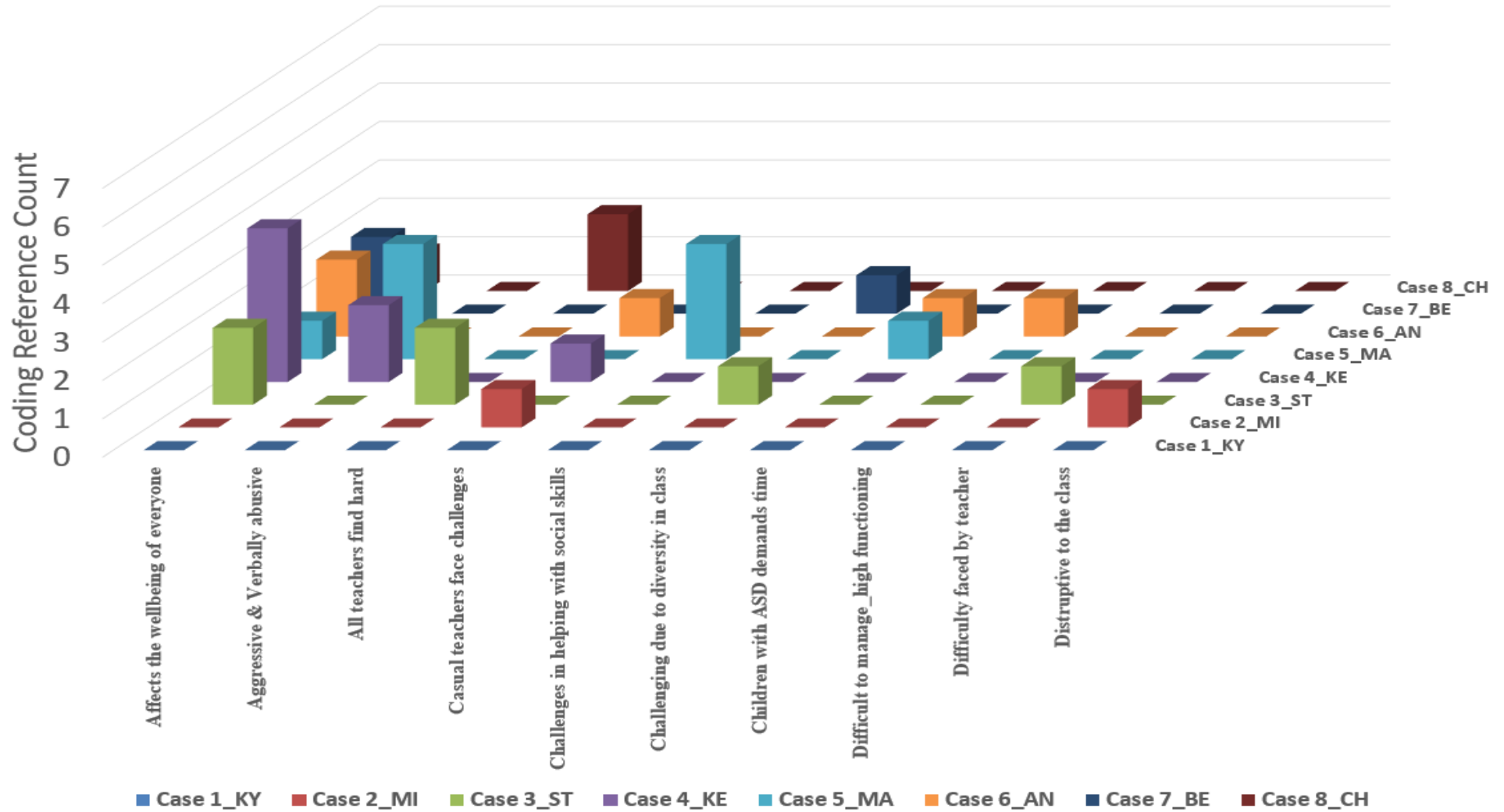
Figure 4. 7. Matrix coding showing relationships among counts of codes for challenges faced by PSTs
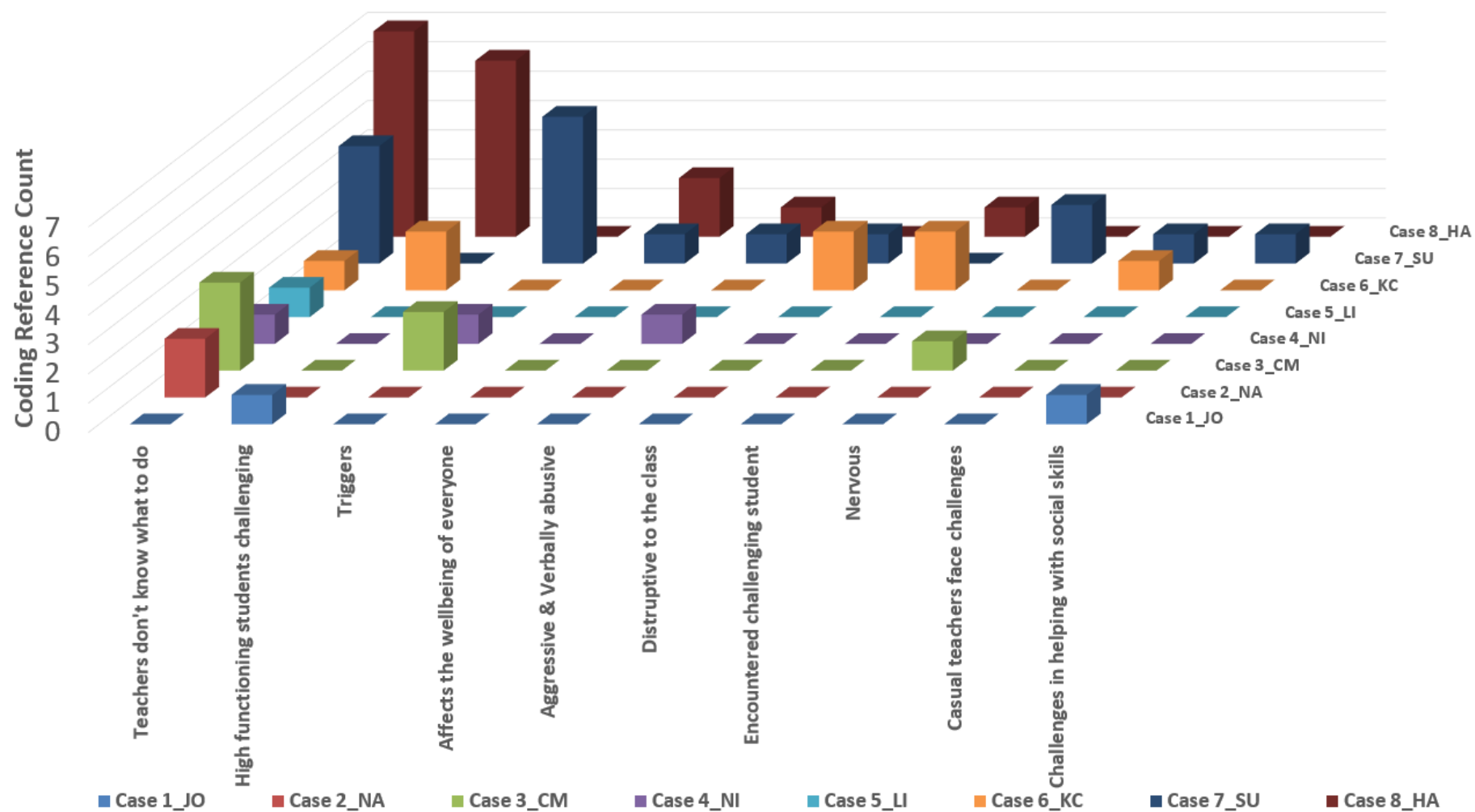
Figure 4. 8. Matrix coding showing relationships among counts of codes for challenges faced by RGs

The matrix coding query was run in the NVivo software to explore the spread of the qualitative data, and to compare how many cases mentioned a particular theme. Figures 4.7 and 4.8 are examples of the visual representation of the data whereby I conducted a matrix query on one of the themes; however, the actual information and their in-depth interpretations are explored further in the following chapters of this thesis. Nonetheless, these figures assisted me to identify each code and its numerical counts (i.e., the relative occurrence of these codes in each of the two cohorts of interviewees) that emerged from each source/case under the theme *Challenges faced by teachers* and where they intersected.

These charts were particularly helpful, as elaborated further in the following chapters, in comparing the codes across cases and to see which sources were most/least coded for the theme *Challenges faced by teachers.* For example, in Figure 4.7, for the theme *Challenges faced by pre-service teachers*, the most frequent counts for the code *Affects the wellbeing of everyone* were referenced four times by case 4_KE. On the other hand, in Figure 4.8, for the *Challenges faced by recent graduate teachers,* the most frequent count was for the code *Teacher doesn't know what to do*, and it was referenced seven times by case 8_HA.

Further to this approach, I also generated cross-tabulation matrices in the NVivo software to confirm and validate the outcomes of the multiple sources, by examining the multiple cases together (rather than individually). Table 4.2 shows an example of cross-tabulations comparing the two cases under the theme *Challenges faced by teacher*s. To further visualise the outcomes from the cross-tabulations, I drew a graph as presented in Figure 4.9. Note that these were the initial codes that were developed, and that during the analysis process some of these codes were merged and some were discarded, owing to the limited references made to that particular code by the participants.

Table 4. 2

*Cross-tabulation of the Coding References between PSTs and RG*s

Codes for challenges faced by teachers	Status = Pre-service (n = 8)	Status = Recent graduates (n = 8)	Total (total n = 16)
Affects the wellbeing of everyone	3	3	6
Aggressive and verbally abusive	0	3	3
All teachers find this difficult	1	0	1
Casual teachers face challenges	0	2	2
Challenges in helping with social skills	0	2	2
Challenging owing to diversity in the class	1	0	1
Children with ASD demand time	1	0	1
Difficult to manage high functioning students	0	1	1
Difficulty faced by teacher	0	1	1
Disruptive to the class	0	3	3
Doesn't know how to deal with issues	0	1	1
Encountered challenging student	0	3	3

Feel unlucky to have a student with severe ASD	0	1	1
Felt under pressure	1	0	1
Half the time students not diagnosed	1	0	1
Hard judging academic ability: behavioural issue	1	0	1
Having a routine is important	0	1	1
High functioning students challenging	0	9	9
Less awareness of dealing with behavioural issues	0	1	1
Limited experience	1	2	3
Mentor teachers don't know how to handle	1	0	1
Minimal instruction given	0	1	1
More stress if SEP units removed	1	0	1
Negative view	5	2	7
Nervous	0	3	3
Non-verbal and violent	0	2	2
Normal strategies don't work	0	1	1

Not a good experience	1	0	1
High functioning students are challenging	0	2	2
Not sure how to help to meet needs of all students	1	0	1
Problem engaging with students	4	2	6
Rather not have them in classroom	1	0	1
Really hard with the rest of the class	2	1	3
Rest of the class miss out on quality time	1	0	1
Student and teacher relationship fail	1	0	1
Student not organised	0	1	1
Student runs around and avoids classwork	1	0	1
Student with ASD makes life hard	1	0	1
Student runs out of the class	0	2	2
Teachers struggle if no support	1	0	1
Teachers are stressed	1	0	1
Teachers don't know what to do	12	19	31
Teachers struggle with strategies	0	2	2

Teachers will be leaving job	2	0	2
Tough experience	1	0	1
Triggers	3	8	11
Was not easy	1	0	1

Table 4.2 was a useful way to examine and compare both PSTs' pre-service and RGs' responses to the theme *Challenges faced by teachers*. The cross-tabulations compared the occurrence of nodes between the two cases. For example, the first code *Affects the wellbeing of everyone* had a balance coding of three in both cases. However, when we consider *High functioning students challenging*, nothing was coded for pre-service teachers, but nine references were coded for graduate teachers.

Additionally, the code *Teachers don't know what to do* was referred to most frequently by both group of teachers. There were 12 coding references for pre-service teachers and 19 for graduate teachers. Further to the cross-tabulation, a graph was also drawn (see Figure 4.9).
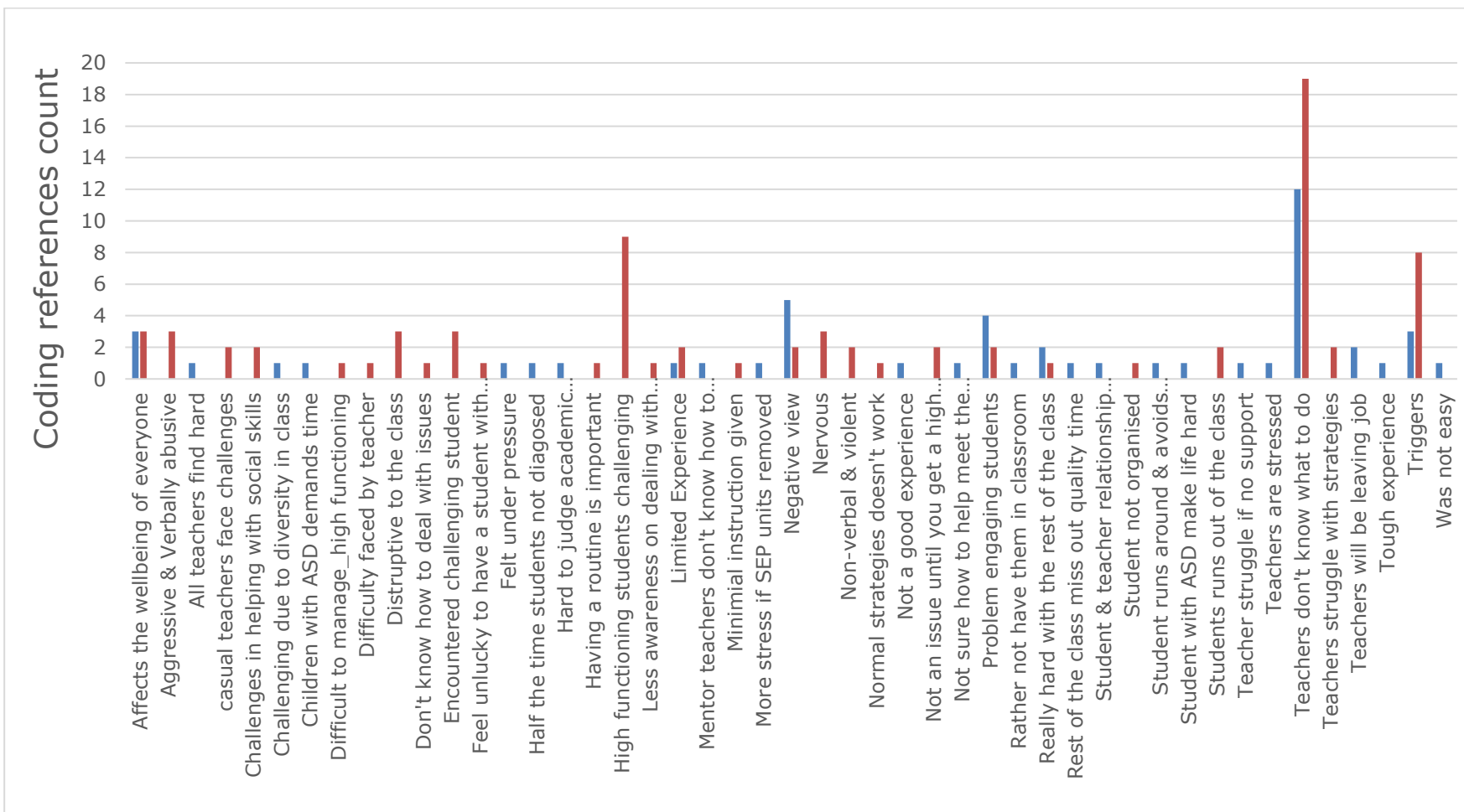
Figure 4. 9. Cross-case analysis of the comparison between PSTs and RGs

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From the cross-tabulation data, I created a graph (see Figure 4.9) of the results to visualise the data more effectively and to compare the relationship between pre-service and graduate teachers in relation to the theme *Challenges faced in teaching students* with ASD in inclusive classrooms. This visual representation of the graph was useful to understand the coding information for the *Challenges faced by teachers*. The bars showed which nodes were coded most, and which nodes were coded least. For example, the code *Teachers don't know what to do* was coded mostly among RGs compared with PSTs.

In summary, the above discussion showed how the data analysis was conducted in this study to lead to the identification of the critical themes that emerged in this study. These themes are discussed in Chapters 5, 6 and 7 of this thesis.

4.8 Audit trail

Generally, an audit trial involves the examination of the inquiry process implemented to verify the qualitative data. Using this approach allowed me to be accountable for my research decisions to demonstrate how I collected, recorded and analysed the data (Bowen, 2009). The audit trail was thus essential to enhance my research study's rigour and transparency, given its qualitative nature. The use of the NVivo 12 software was a useful resource for audit transparency, as all decisions were easily traced from the raw data. According to Mills, Durepos and Wiebe (2010), NVivo provides "an audit trial of the case study projects with the use of summaries that can be exported and/or printed from the software" (p. 193). The project summary in the NVivo 12 software provided a detailed count of folders and sub-folders. These folders contained the items of the research project, which showed an account of when the items were created and modified and by whom (Mills, Durepos, & Wiebe, 2010).

An example of the nodes that emerged for the theme *Challenges faced by teachers* is shown in the Figures above, with reference to the file from which that node emerged, and how many references were made from each case, when and by whom it was created, and when it was modified. Further, "for each node, a table with type of source, percentage of source document, and words and paragraphs coded"

(Mills, Durepos, & Wiebe, 2010, p. 193) was created and saved in the NVivo software. The audit trial was clearly demonstrated using the NVivo software, whereby I was able to refer to the data whenever I needed to do so. Moreover, I was able to make explicit and accountable the processes of data collection and data analysis in which I had engaged.

4.9 The study's rigor

4.9.1. Triangulation of data

Yin (2014) described triangulations as "the convergence of data collection from different sources, applied to determine the consistency of a finding" (p. 241). It assists the researcher to cross-examine the honesty of the participants' responses (Anney, 2014) and to provide an in-depth understanding of the phenomenon under investigation (Callaway, 2014). The interviews were recorded and transcribed, and participants were contacted to verify their transcripts. Furthermore, for the interview participants who completed the online survey, their responses were compared to check for consistency and truthfulness of the data. Hence, during triangulation, I compared, contrasted and cross-referenced data from multiple participants across multiple settings to maintain the accuracy of data interpretation (Bubb-McKinnie, 2017; Lodico et al., 2010).

Accordingly, in the context of the present study, triangulation promoted the corroboration of data across other participants (Creswell, 2012), such as PSTs and RGs involved in this study. These groups of teachers had different perspectives, experiences, and views to share. Moreover, the triangulation of data from multiple respondents across multiple backgrounds also strengthened the validity of the data and led to a better understanding of the phenomenon under investigation (Bogdan & Biklen, 2007). Triangulation enabled the reduction of incorrect interpretations of the results, and comparison of results with those found in the literature (Rumrill et al., 2011). Hence during the triangulation, each information source was carefully examined, and valid data was found to support arguments (Bubb-McKinnie, 2017).

Additionally, to enhance the triangulation and validity of the collected data, I incorporated member checks, which were voluntary. I emailed the interview transcripts to the participants for verification of the information they provided during

the interviews. This was done to check for any inconsistencies with their views and opinions, and to make any relevant changes they deemed necessary. Only one participant replied requesting minor changes; the rest of them were happy with the transcripts. During the data analysis process, an interpretation of the data with summarised themes was also emailed to the participants for verification (Bubb-McKinnie, 2017; Creswell, 2012).

4.9.2. Trustworthiness

As a qualitative researcher, I considered four factors – dependability, credibility, transferability and confirmability – as the trustworthiness criteria to ensure the rigour of my research study (Lincoln & Guba, 1985; Schwandt, Lincoln, & Guba, 2007).

4.9.2.1 Dependability

How can one determine whether the findings of an inquiry would be consistently repeated if the inquiry were replicated with the same [or similar] subjects [respondents] in the same [or similar] context? (Guba, 1981, p. 80).

Dependability is considered to be the consistency of the outcomes of a research study, and the extent to which the research measures can be acknowledged, audited and analysed by someone outside the research project (Polit, Beck, & Hungler, 2006; Sandelowski, 1986). In this study, comprehensive coverage of the methodology and approaches was presented to enable readers to evaluate whether appropriate research practices had been followed and whether another researcher could duplicate the research study (Shenton, 2004). A thorough understanding of the research methods and of their effectiveness was considered while conducting this study. Therefore, the following critical approaches were taken into consideration:

(i)   the research design and its implementation, describing what was planned and executed on a strategic level;

(ii)   the operational detail of data gathering, addressing the minutiae of what was done during data collection. (Shenton, 2004, pp. 71-72)

In this research study, the researcher was able to establish dependability throughout the data analysis process while implementing measures such as coding

the themes, and repeatedly checking and comparing results (Patricia, 2017). Additionally, all interviews were recorded using a standard recorder and then transcribed to increase the dependability of my research study (Creswell, 2013a; Reynolds, 2016). Furthermore, triangulation not only supported the dependability of this research study, but also provided detailed and rich information regarding the phenomenon under investigation (Creswell, 2013).

To ensure further dependability, *Code-recode strategy* and *Stepwise replication* were also considered in this research. Code-recode strategy involved coding the same data twice throughout the analysis process. The researcher initially coded the data and then waited for at least two weeks before coding again to compare and evaluate the results (Anney, 2014). Stepwise replication involved a few other researchers analysing the same transcripts for a comparison of the final results (Chilisa, 2005). In this way, the researcher was able to understand the patterns of the results of the coded data more comprehensively.

4.9.2.2 Credibility

How can one establish confidence in the "truth" of the findings of a particular inquiry for the subjects [respondents] with [whom] and the context in which the inquiry was carried out? (Guba, 1981, p. 79)

Credibility refers to the extent of confidence in terms of the truth based on the research findings. Additionally, credibility refers to whether or not the researcher presents believable and correct information that is drawn from the respondents' initial data (Lincoln & Guba, 1985). Credibility ensures that researchers provide truthfulness and trustworthiness of the multiple realities of the phenomenon under investigation (LeCompte & Schensul, 1999; Lincoln & Guba, 1985; Merriam, 1998). Furthermore, given the qualitative nature of this research, multiple realities are co-constructed and interpreted through the lived experiences and interactions with the participants. Hence I, as the researcher, ensured that those multiple realities were presented as appropriately as possible (Krefting, 1991).

To achieve credibility in this research study, I had the interviews transcribed by a professional company. Once the interviews were transcribed, I cross-checked the transcripts against the recorded interviews. Then I conducted member checking

by contacting the interviewees to verify the accuracy of the interview transcripts. According to Lincoln and Guba (1985), member checking is "the most crucial technique used for establishing credibility in a research study" (p. 314). Thus, triangulation in this study improved the likelihood of the findings and interpretations being credible (Lincoln & Guba, 1985).

Furthermore, Shenton (2004) suggested that, in order to maintain the credibility of a research study, it is important to consider the "tactics to help ensure honesty in informants when contributing to the data" (p. 66). Considering this, I provided the relevant information about this research project to the participants involved (see Appendix C for the participant information sheet and the consent form). The participation in this research study was entirely voluntary, and opportunities for participants to withdraw at any time within the research study were also acknowledged. Hence, the data collection involved only those individuals who were genuinely interested in participating in this study. Therefore, all information regarding this study was truthfully declared to those who were willing to contribute and provide data in this study, and I ensured that the research questions were pertinent to PSTs and RGs who have worked with, or will be working with, students with ASD. Moreover, the credibility of the research design was strengthened through detailed explanations of the data collection approaches and analysis.

4.9.2.3 Transferability

How can one determine the degree to which the findings of a particular inquiry may have applicability in other contexts or with other subjects [respondents]? (Guba, 1981, p. 79-80)

Transferability refers to the extent to which the findings of a qualitative research study can be applied to other contexts/situations with different groups of participants (Bitsch, 2005). For a qualitative study such as mine, a small number of individuals was selected. Therefore, it is impossible to demonstrate that the findings and conclusions are applicable to other situations and populations (Shenton, 2004, p. 69). However, Bitsch (2005) has suggested that qualitative researchers can facilitate judgements about the transferability of their studies through "thick description and purposeful sampling" (p. 85).

To maintain "thick description" in my research study, I carefully explained the research processes in detail, from the data collection process to the final writing of the thesis (Anney, 2014). Furthermore, according to Li (2004), thick description "enables judgments about how well the research context fits other contexts, [and] thick descriptive data, i.e. a rich and extensive set of details concerning methodology and context, should be included in the research report" (p. 305).

Additionally, a purposive sampling was employed to assist the researcher to target those key participants who had some prior knowledge of the concerns under investigation in this thesis (Ary, 2010). In this qualitative case study, a purposive sample of pre-service teachers and recent graduates was selected; hence the outcomes of the study may be transferable to the contexts of other teachers who can teach students with ASD but who were not involved in this research study. Conversely, the thorough description of pre-service teachers and recent graduates may be transferred to different setting and groups. That is, the analysis of the experiences of the participants teaching students with ASD in this study could be transferable to other inclusive settings (Patricia, 2017).

4.9.2.4 Confirmability

> How can one establish the degree to which the findings of an inquiry are
> a function solely of the subjects [respondents] and conditions of the
> inquiry and not of the biases, motivations, interests, perspectives and so
> on of the inquirer? (Guba 1981, p. 80)

Confirmability refers to the extent to which the findings of the research study may be confirmed or verified by others and do not include any bias by the researcher. In this research, I ensured that the outcomes were the reflection of teachers' opinions and beliefs in working with students with ASD and not the reflections and opinions of the researcher. To adhere to this goal, I documented a set of processes used for checking the data multiple times throughout the process of data analysis. Furthermore, to ensure confirmability in this study, the supervisors also reviewed the findings of this study. The participants were given time to review the interview transcripts and the summary sheets of the results (van Manen, 1990).

The researcher strengthened the confirmability of this research by presenting a detailed interpretation of the data, and by ensuring that the literature review was incorporated in the interpretations of the findings (Munn, 2017). An audit trial was further maintained to ensure the study's confirmability. Importantly, to ensure that further confirmability was achieved, results and data were closely linked in this study (Lietz & Zayas, 2010). To reduce the researcher's influence over the outcomes, the data were reported in the form of direct quotations, tables and graphs.

Additionally, the philosophical positions associated with my ontology, epistemology and axiology, and a detailed methodology, were reported. According to Miles and Huberman (1994), to ensure the confirmability of qualitative research, it is crucial to report on the researcher's predispositions, beliefs and assumptions (i.e., ontology, epistemology and axiology). In conclusion, it is crucial to ensure the accuracy of qualitative research; therefore, the above four aspects were considered carefully while conducting this qualitative case study.

The following section of the chapter discusses the ethical and political considerations of this research.

4.10 Ethical and political considerations

As this project was about humans, ethical and political considerations had to be deliberated to establish the operating benchmarks and rules of conduct. The ethical deliberations of any research study are closely associated with the political dimensions, since the manner in which the investigators use their positions of power depends upon the sense of their personal responsibility (McDougall, 2004). Hence, any issues of perceived power differences between the researcher, as an experienced educator completing the doctoral program, and pre-service and/or recent graduate teachers who are less experienced and knowledgeable were acknowledged. As stated by Hatch (2002), researchers need to be committed and sensitive to vulnerable cohorts, inequality of power relations, and placing the potential participants at risks.

Coombes, Danaher and Danaher (2004) stated that all researchers at some point in time may encounter political dilemmas and tensions since such researchers are expected to employ research as a rather risky business. A crucial political dilemma in this type of research can arise during the publication of this work. As

stipulated by Punch (1994), harmonious relationships become unstuck when participants feel they are subjected to an analysis of data collected from them that may have been interpreted in a way that perhaps does not concur with their personal perspectives. Likewise, negotiations with organisational units during the publication phase could create personal differences of opinion, and even lead to questions around whether an item is objectionable. In such cases, it is necessary that the researcher is willing to negotiate with the participants, relevant organisations and stakeholders. Any uncertainty should be dealt with in a manner that is convincing and creates trust, with a continuous flow of information to all stakeholders.

Accordingly, an ethical procedure must be adhered to in order to safeguard the dignity and welfare of all participants (Wiersma, 2009). Proper ethics will ensure that the research is consistent with the concepts of "informed consent, avoidance of harm and adherence to confidentiality associated with the recruitment of participants, avoidance of harm with the conduct of fieldwork, and confidentiality with the writing of research reports" (Flinders, 1992, p. 102). Next, each ethical and political dimension that was considered in this research study is discussed in turn.

4.10.1 Minimising risks

Risks in research are defined as potentials for harm, discomfort and inconvenience to human participants in a given research project. The assessment of risks in this research project was undertaken following the procedures outlined by the Australian Government (2007):

- identifying the risks;
- gauging their probability and severity;
- assessing the extent to which they can be minimised;
- determining whether they are justified by the potential benefits of the research; and
- determining how they can be managed. (National Statement on Ethical Conduct in Human Research 2007 [Updated May 2018], p. 12)

This research was identified as low risk; however, I ensured that, if any risk were identified, I would have taken immediate action to minimise the risk of any

harm to the participants, as outlined in the *Guide to managing and investigating potential breaches of the Australian code for the responsible conduct of research* (Australian Government, 2018).

As stated by Blaikie (2000), "the major ethical issue in most social research is the treatment of human respondents or participants" (p. 20), and it is the researcher's responsibility to "exercise great caution to minimise risks" (Stake, 2000, p. 448). To address the ethical and political concerns in this study, I endeavoured to minimise all known risks to the participants. According to McDougall (2004), one of the critical ethical and political deliberations in any research is to protect the rights of the participants. Wiersma and Jurs (2009) have stated that it is important to protect participants' rights and to conduct research in ethical ways in order to safeguard their dignity and welfare. Therefore, respondents were given opportunities to withdraw from this study at any time if they wished to do so. Moreover, the benefits of the project were outlined in the information sheet that was provided to all participants.

It was further considered that the risks of participating in this project outweighed the benefits. In this study, the potential risks included inconvenience and time commitments of the participants to participate. Therefore, I ensured that the interviews were conducted at an appropriate time and day that suited the respondents. Moreover, this project did not involve psychological and physical risks. The questions designed for the investigation were carefully planned not to directly target teachers' personal teaching styles or those areas that would cause the participants to modify/amend their practices after participation. Hence, all possible ethical clearance principles were followed to conduct good research (beneficence) with no harm (non-malfeasance) to the participants.

4.10.2 Maintaining confidentiality

Given that teaching can be a very complex and challenging task, pre-service teachers and early career teachers might have felt overwhelmed or embarrassed to participate in the research. It was reported by McDougall (2004, p. 34) that teachers tend to be a vulnerable group when participating in research because of the various forms of external factors impacting upon their work. Consequently, these teachers might believe that their comments presented during the interviews may potentially be

used against them. This ethical dilemma was met by reducing any potential risks. Moreover, I informed the participants that the risks involved in this study were considered minimal, and that, if they felt uncomfortable in participating, they could choose to decline to participate.

Participants were further informed that participation in this study was entirely voluntary, and that their participation or non-participation in this study would have no effect on their current or future relationships with the institution. Additionally, the respondents were informed that all information collection techniques would adhere to strict confidentiality and anonymity. Pseudonyms were used to replace participants' names to ensure anonymity. Thus, I followed the relevant ethical guidelines in obtaining informed consent from the participants, safeguarding their anonymity and confidentiality, and refraining from any dishonest practice during the data collection, analysis and reporting process.

4.10.3 Informed consent

In any research involving human participants, it is important to provide them with an opportunity to decide whether they are willing to participate in the study. This can be achieved through a consent form, which helps participants to understand their rights around participation, and to understand issues of confidentiality and anonymity (Wiles, Crow, Charles, & Heath, 2007). In addition, the signed consent form helps to safeguard the investigator from any accusations or to resolve any unforeseen issues (Coomber, 2002).

The participants in this research were final year pre-service teachers and recent graduates from the same university. For the pre-service teachers, the consent to participate in this study was implied. In the online survey, they indicated their consent to participate by answering the survey questions (see Appendix G). On the other hand, the interview participants provided their consent to participate in the interviews by selecting the "Yes" option on the online survey in response to the question that asked, "Would you be interested in a telephone interview with me regarding this survey?" For the recent graduates, a consent form was emailed with the relevant information about the research and the contact details of the researcher. These participants were asked to return the signed consent form if they were willing

to participate in the interviews. By seeking the consent of the prospective participants, I was able to make informed decisions about conducting the research in an ethical and transparent manner. For informed consent and information about the study, see Appendices B and C.

4.11 Chapter summary

In Chapter 4, I have presented the research design and methodology of this research. Firstly, I introduced this chapter by presenting the research paradigm of my study in the form of a discussion of its ontology, epistemology, axiology and methodology. Then I presented the philosophical assumptions of social constructivism, which were grounded within this study, and which assisted me to explore and understand multiple realities from the viewpoints of the participants involved in the study. A qualitative exploratory case study method of collecting data about participants' perception of inclusion and their self-efficacy and preparedness in teaching students with ASD, through semi-structured interviews, and its justifications, were also presented in this chapter.

In this chapter, I have further provided a detailed discussion of the thematic data analysis, which involved within-case and cross-case analysis using NVivo 12 software. The audit trail, triangulations of data and trustworthiness were also considered. Finally, I ended the chapter by presenting the ethical and political considerations during the process of planning and conducting this research.

Chapter 5 The inclusion of students with ASD

5.1 Chapter overview

In this chapter and the following two chapters, I present the results of the qualitative data analysis related to the three overarching research questions, which were outlined in Chapter 1 of this thesis. This chapter highlights the themes that emerged from the data analysis process, focusing on pre-service teachers' (PSTs')

and recent teacher graduates' (RGs') views of the inclusion of students with ASD in inclusive classrooms, in order to address research question one:

(1) What are the PSTs' and RGs' views of the inclusion of students with ASD*?*

This question is vital in the context of the qualitative case study implemented in this thesis as it is aimed at identifying the PSTs' and RGs' views about the inclusion of children with ASD in their classrooms, before exploring their self-efficacy and preparedness in teaching such students. This chapter begins with an introduction of the participants, followed by themes that emerged from research question one. The first major theme discussed is 'limitations in ASD-specific knowledge and strategies' with sub-themes on 'knowledge of inclusion does not translate into practice,' and 'limited exposure to models of inclusive education evidence-based practices (EBPs) during preservice training.' Then the second major theme discussed in this chapter relates to 'barriers to inclusive practices,' and these barriers are lack of funding, class size and time constraints, and challenging behaviours of students with ASD. The third major theme discussed in this chapter is 'teacher stress and job-satisfaction,' and the final theme is that 'not all full inclusion is successful.' The following sub-section provides brief backgrounds of the 16 participants who were involved in the qualitative interviews, followed by a discussion of the themes that emerged.

5.1.1 Introduction to the participants

Pre-service teachers

Eight pre-service teachers were interviewed in this study. To ensure anonymity, pseudonyms were used for all participants. Their background information is presented here. Firstly, Chantal was completing the Bachelor of Education program for primary teaching. During her teacher education program, Chantal did not take any of the special education courses. She completed her teaching practice mainly within an inclusive independent school, and she had worked with students with ASD in inclusive classrooms. The average number of students with ASD in her cumulative teaching experience was more than five, but she did not have any siblings or any children of her own with an ASD condition.

Maria was enrolled in the Bachelor of Education program, majoring in secondary teaching. She had not undertaken any special education courses, and she also had no experience in working with children with ASD. Maria did not provide information about the settings of her teaching and whether she had taught in inclusive classrooms or worked in specialised units. She did not have any close contact with individuals with an ASD condition.

Kelly was enrolled in the Bachelor of Education program, majoring in early childhood. Kelly had not undertaken any special education courses, and she had completed her teaching practicum mainly in government schools as well as in an inclusive setting. The average number of students with ASD in her inclusive classroom at any one time ranged from one to two. Further to this, Kelly was a parent of a child with ASD.

Anna was also completing her Bachelor of Education program, majoring in early childhood. Anna had undertaken a special education course as an elective course. During her teaching practice, she taught in an inclusive government school as well as in special education units, which means a self-contained classroom where students with special needs are provided with individualised support. Anna had worked with students with ASD during her teaching practicum. There were about one to two students with ASD in her classroom. Anna was a parent with a child with an ASD condition.

Milla was enrolled in the Bachelor of Education early childhood program. Mila had not undertaken any special education courses, although she had worked with children with ASD conditions in a child-care centre, and she had also taught within inclusive settings. According to Mila, there were, on average, one to two students with ASD in her inclusive classroom. Mila had not had personal contact with individuals with ASD in the past.

Stella was enrolled in the Bachelor of Education program, majoring in early childhood. Stella had undertaken four units of special education courses. She had some experience in working with children with ASD during her teaching practice. Stella had taught within inclusive settings in government schools. The average

number of students in her classroom ranged from three to five. Stella had a child of her own with an ASD condition.

Bella was enrolled in the Bachelor of Education program, majoring in early childhood. Bella had completed two special education courses as elective courses. During her teaching practicum, the total number of students with ASD in her cumulative teaching experience was more than five. Bella did not have any experience in working with individuals with ASD conditions prior to her teaching practice.

Kayla was completing her Bachelor of Education program, majoring in early childhood. She had not undertaken any special education courses during her teacher education program. Kayla had never worked with students with ASD, nor did she know anyone who had ASD in her family. Kayla did not provide information about the settings of her teaching practice.

Recent graduates

Eight recent graduates were interviewed from the university's alumni group. Hope had studied in the Bachelor of Education program, majoring in primary school education. She did not take any special education courses during her teacher education program, although she stated that she did have some experience in working with students with ASD. Hope had been teaching for the last two years and did not have any outside connections with individuals with autism, apart from the two students in her class. Hope mentioned that she had been teaching a prep class since she had graduated.

Summer had been teaching for the last two years. Prior to joining the teaching profession, she had no experiences and/or connections with individuals with ASD outside her teaching career. She mainly taught in prep class and in Year 1. The number of students diagnosed with ASD in her class were three. Summer completed her Bachelor of Education program, majoring in primary school education. Summer did not take any special education courses during her teaching education program.

Cynthia was in her first year of teaching career. She had completed the Bachelor of Education program, majoring in primary school education. In her

classroom, she had one girl and two boys who had been diagnosed with ASD. During her teacher education program, Cynthia took five special education courses. She did not have any prior experience in working with individuals with ASD.

Lillian had been teaching for the last two years. She had completed the Bachelor of Education program, majoring in primary school education. During her teaching career, she had taught years 3, 4 and 6. In her current classroom, she had one student who had been verified with an ASD condition, while the other one was being verified. Lillian's elective courses were all focused on special education. Lillian had also worked as a teacher aide for one year, and she said she had had considerable experience in working with students with ASD conditions.

Natalie was in her first year of teaching. She had completed the Bachelor of Education program, majoring in primary school education. She taught within an inclusive prep classroom where one student had been diagnosed with ASD. Before becoming a teacher, she had performed some volunteer work in schools, and she was also working with one student with ASD at the time of the interview. She did not take any special education courses during her teacher education program.

Nina was also in her first year of teaching and had studied for the Bachelor of Education program, majoring in primary school education. She had studied special education courses; however, she had no prior experience in teaching students with ASD. Joy and Kahlia had also studied in the Bachelor of Education program, majoring in primary school education. Both had taught for the last three years and also studied special education courses, but they did not have any prior experience in teaching students with ASD.

Notably, all the participants involved in the study had taught students with ASD in their inclusive classrooms (either through their teaching practice or after being employed as teachers). The next section of this chapter presents the themes that emerged in relation to the pre-service and recent graduates' views of the inclusion of students with ASD. Table 5.1 shows the individual themes and the sub-themes that emerged from the inductive and deductive (Creswell, 2013a) data analysis process.

Table 5. 1

Themes and Sub-themes Related to Research Question 1.

Theme: (Section 5.2)

Limitations in ASD-specific knowledge and strategies

Sub-theme:

Knowledge of inclusion does not translate into practice

Limited exposure to models of inclusive education evidence-based practices (EBPs) during preservice training.

Theme: (Section 5.3)

Barriers to inclusion practices

Sub-theme:

Lack of funding to offer support in inclusive classrooms

Class size and time constraints

Challenging behaviours of students with ASD

Theme: (Section 5.4)

Teacher stress and job-satisfaction

Theme: (Section 5.5)

Not all inclusion is successful

5.2 Limitations in ASD-specific knowledge and strategies

The inclusion of all students with ASD conditions in inclusive classrooms is no doubt significantly beneficial. However, 11 of the participants in this study said that they were not successfully accommodating these students in their classrooms. These 11 participants constituted a significant proportion of the total number of

participants (i.e., a total of seven out of the eight PSTs and four out of the eight RGs). Using the inductive process and the within-case analysis, I compared these datasets from each participant in this research study, in order to explore and better understand their knowledge and experiences about inclusion of students with ASD. This exploratory approach was helpful to create a rich understanding as it enabled me to examine and further explain any similar or differing views among the cases. The selected themes related to the participants' concerns, as deduced from the findings, are discussed below:

From the analysis of the data, two (out of the eight cases of counts) were coded from the PST interviews, and three (out of the eight cases of counts) were coded from the RG interviews, mainly regarding participants' concerns about not providing suitable levels of support to all students, irrespective of their learning abilities. Therefore, it can be interpreted that many of the participants in the interviews did not state such a concern. Those five participants who disclosed their concerns about not being able to provide the appropriate support to students within inclusive classrooms were represented as follows:

Bella (PS) mentioned,

One of the limitations of mainstream schooling for children with additional learning needs is that we're putting them in these classrooms and saying, "Hey, look, we're inclusive" - because they're in mainstream classrooms - but we're not giving them the level of support that they require to cope with that environment.

This deduction also suggests that the students with ASD are somewhat disadvantaged if they are not given the appropriate level of support based on their specific needs.

5.2.1 Knowledge of inclusion does not translate into practice

From the data analysis, it was found that both the PS and the RG teachers knew about inclusive practices, and both groups of participants expressed a general belief that including students with ASD within inclusive classrooms is important, even though they appeared to lack the skills and strategies to include these students

successfully in their classrooms. Successful inclusion can only take place if teachers have the required skills and knowledge in relation to specific strategies in accommodating students with special needs (Savage & Erten, 2015), including those with ASD. A few teachers also mentioned that they lacked knowledge of ASD, and that they did not have any experience in teaching these students. As Stella (PS) stated, "I wasn't sure what to do, how to meet the needs of those kids and do that proper inclusion where they were getting the same opportunities that the other kids were getting." Bella (PS) said, "I still don't have the experience with those students, on a one-on-one basis in particular, and feel that I still have very limited knowledge." Maria (PS) said, "Obviously I'm not very experienced yet." She considered her knowledge of accommodating students with ASD to be "pretty low." Since Maria studied only general teacher education courses, she did not have enough knowledge of ASD, even though she stated that she understood the meaning of inclusion.

At the same time, Kahlia (RG) articulated that most teachers whom she knew "struggle to even know the basics of using different strategies to teach these students, you know, like visuals, and things like that, that should be common knowledge." Nina (RG) commented that her specific knowledge of ASD specific was "very low, and I really only know how to deal with the kids in my class, the way that they are." She further expressed that "I don't think I know, really, about them very much at all, or the best way to deal with the different situations." Summer (RG) also mentioned she did not know the best way of dealing with students with ASD. Even though students with ASD conditions are being placed in inclusive classrooms, there are teachers who feel they are inadequately trained to provide a required level of support for an inclusive educational experience to all their students.

Implementing inclusive classrooms does not always guarantee success if the relevant teachers have limited knowledge and skills in successfully accommodating these students in their classrooms. There were few participants in this study who had studied special education courses, and the few who had completed an ASD course as an elective were generally knowledgeable about ASD compared with those who had studied general teacher education. Participants supported inclusion, but they felt that they were failing in their abilities to include these students successfully in their classrooms owing to their lack of expertise about ASD.

The following subsection of this chapter discusses some of the reasons why participants' knowledge of inclusion did not translate into practice. I begin by discussing the participants' knowledge and skills in relation to evidence-based practices in teaching students with ASD, followed by dealing with challenging behaviours, which are some of the concerns that may inhibit the successful inclusion of students with ASD in inclusive classrooms.

5.2.2 Limited exposure to models of inclusive education evidence-based practices

It is imperative to note that the educators who work regularly with students with ASD must be knowledgeable and skilled to practise evidence-based practices (EBPs) in education in order to decide the appropriate teaching strategies for such cohorts. Students with an ASD condition no doubt require greater scrutiny and attention in terms of the specific teaching plans, since current evidence indicates that implementing intensive interventions that have been proven to be effective can lead to better outcomes (Strong, 2014). Nevertheless, in this study it was found that the participants significantly lacked the skills and knowledge on EBPs in teaching students with ASD conditions. Without the knowledge of ASD-specific EBPs, it would be challenging for teachers to plan teaching pedagogy to accommodate these students successfully in their classrooms.

The findings of this study about the participants' lack of awareness of EBPs concurred with a previous study by Bain et al. (2009), which found that teacher candidates implemented interventions for students with ASD without evidence-based research because of a lack of awareness and knowledge in this area. Additionally, Hendricks (2011) claimed that special education teachers failed to implement evidence-based interventions authentically. In the context of the present discussion, 11 out of 16 participants were unaware of EBPs in relation to teaching students with ASD conditions. Out of those eleven participants, six were PSTs while the rest were RGs.

It was a challenging task to collect further information about the participants' confidence, particularly in implementing EBPs, given that they lacked the awareness and understanding of these important practices. According to Hess, Morrier, Heflin

and Ivey's (2008) study, teachers rarely use EBPs with students with ASD. This may be due to limited skills and knowledge in relation to the different types of EBPs that are available. Thus, this finding is consistent with the outcomes of the current study.

Four of the participants in this study stated that they had "heard" about EBPs from elsewhere, but not through their teacher education programs. It was either through personal experiences with their child or through professional development programs. Some of the examples extracted from the interviews clearly indicated that these participants lacked an awareness and understanding of EBPs.

Anna (PS) said for example that she was unaware of the EBPs and of their relevance in teaching students with ASD conditions. She thought that, during her teacher education program, she may have learned about EBPs in one of her courses, but she was not able to remember about it at all and she never implemented it with students in her class.

Another participant, Bella (PS), said,

I can't really say that in any of my subjects I learned about EBPs - sorry, I'm just thinking back. Besides the autism course that I did, only one other subject is about diversity, [in] which we would have discussed autism but, as for practical evidence-based strategies that I can apply into a classroom, and evidence-based learning, I can't say that I've had that level of teaching and learning in my bachelor [degree].

Another participant, Kayla (PS), also had no prior awareness about EBPs and said that she had not learned anything about this issue in her courses. She further said, "I'm sorry. I probably wouldn't have anything valuable to add there." Maria (PS) also did not have anything further to comment about EBPs owing to her lack of awareness. Furthermore, when Mila (PS) was asked about her awareness and understanding of EBPs, she said,

At the moment I've got a mind blank. Look, to be quite honest, I actually think that I must have been asleep when I am learning about EBP. I may have

learned bits and pieces of it, but obviously it's something I've not grasped. So, my apologies for that. It rings a bell, but I just can't remember.

In agreement with the other participants, Stella (PS) commented:

Oh, gosh, I can't think of anything specific off [the top of] my head. Like I said, the ASD course that I did, we talked about the framework for - I'm trying to think off the top of my head what the name of the framework is. Sorry. I graduated a few weeks ago, so it's all kind of just - you know, have that moment of, "oh, it's all done", and forget it all.

Stella (PS) and Kelly (PS) said that they could not remember if they had learned anything about EBPs from their courses, but that all that they had learned was through personal experiences with their sons, who had been diagnosed with ASD conditions. Similarly, Cynthia, Joy, Natalie and Nina, all of whom were RGs, could also not specifically recall learning anything about EBPs. In fact, they felt that they did not possess any knowledge of this matter. In agreement with the other participants, Summer (RG) could not recall anything that was taught about EBPs during her teacher education program either.

Surprisingly, the data in this study revealed that only one of the PSTs knew, and only four of the RGs, knew what EBPs meant and they could not recall whether they had learned the specific strategies of EBPs for students with ASD conditions. Based on this evidence, there appeared to be a significant gap in the teacher education programs and or teacher's professional development initiatives about approaches to EBPs related to teaching students with ASD. Thus, it is critical that extensive knowledge and understanding of EBPs must be integrated in teacher education curriculum, and as professional development in order to enhance teachers' skills and confidence in this important area of inclusive education. This notion is also endorsed by a number of other researchers, such as Probst and Leppert (2008), and Strong (2014). Since schools are accountable for the successful inclusion of students with ASD, it is imperative to apply EBPs teaching that has been proven to improve student's outcomes (Showalter-Barnes, 2008).

According to Marder and deBettencourt (2015), the use of EBPs has proven to be an effective tool in teaching students with ASD in inclusive classrooms. However, this study has shown that a relatively large proportion of teachers lack the most suitable strategies to teach students with ASD, and hence feel less comfortable in teaching these students. Despite a need for EBPs in teaching students with ASD, few papers are available about how to conceptualise and coordinate the content of ASD courses for pre-service learners (Coates et al., 2017). Furthermore, owing to a lack of skills and knowledge in relation to ASD-specific strategies and to inadequate knowledge about EBPs, teachers who are not prepared comprehensively to address the needs of students with ASD can find inclusive education significantly challenging.

5.3 Barriers to inclusive practices

While teachers' limited understanding of EBPs and ASD-specific teaching approaches, and their overall self-efficacy and lack of preparedness may also be understood as barriers to inclusive practices, other barriers identified are funding, class size, and time constraints, and dealing with challenging behaviours of students with ASD. The following sub-sections discuss the barriers faced by teachers in offering inclusion practices for students with ASD.

5.3.1 Lack of funding to offer support in inclusive classrooms

The appropriate support provided to teachers within their classrooms may influence their confidence levels. It was evident that inclusive education can be challenging where there is no support provided, and this is particularly true when there is a student who is high on the ASD spectrum and needs one-on-one support. This deduction was confirmed by Bella (PS), who said, "I guess your confidence in dealing with those children's behavioural issues and their social issues also comes down to the level of support you receive from the school." Anna (PS) commented that students with challenging and complex needs are difficult to manage. Therefore, support in the form of teacher aides within the classroom is important.

An equal number of participants (i.e., five of the PS cohort and five of the RG cohort) felt that there was not enough support provided within their inclusive classrooms. The other participants mentioned that they did receive some level of

support in the form of a teacher aide within their inclusive classrooms, but that such support can be rather intermittent. The decision about being able to have the support of a teacher aide is not made until the student is diagnosed with the ASD condition. Bella (PS) expressed her concerns as follows: "Students have to be diagnosed, and then they have to be verified by the Department. Until they have a verification, schools can't allocate extra funding to help them." Summer (RG) had similar concerns and stated that "if they don't have a formal diagnosis, they can't get the funding and the support."

Furthermore, Mila (PS) revealed that:

Supports need to be in place when that child starts schooling. I've been in childcare and it's taken six months to get the funding, so we can have a third educator in our room to support. Six months is a long time to get - to have to wait to get the funding for that to happen. When you think a school year is only what - from - usually from end of January to early December, that - it takes six months to get the funding and then you've only got it for three months.

If we consider these statements by Bella (PS) and Summer (RG), it becomes evident that both these participants confirmed that a lot of students were not yet diagnosed even though they exhibited ASD-specific characteristics. It is challenging to accommodate them in inclusive classrooms if the right support is not provided. Additionally, Chantal (PS) said most of the classrooms where she had worked did not have enough resources (like assistive technology), mainly because of a lack of funding.

Mila also showed her frustration by saying that,

Teachers must fight for the resources that they need to support that child in a holistic way in the classroom. They want us to include them. They want us to

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be able to provide [an] holistic approach to teaching, and yet they say in one breath [that] they don't resource it.

Chantal (PS) argued that "most of the classrooms that I've taught in either haven't had the need for it or haven't had the funding." Some students with ASD require one-on-one support from a teacher aide. Because of a lack of funding, there are not enough teacher aides employed to support these students. Even if they are employed, it would be for limited hours and the support that they provide would be for the whole class, not specifically for students with ASD.

Anna's (PS) concern was that, "if they start dropping our teacher aide hours, then we're going to find that there's going to be a lot more behaviours in the classrooms." Anna further suggested: "I think more teacher aide hours put through for our students with the ASD trait, and our special needs students. Especially if they're going to put them into more mainstreaming classes." Likewise, Kelly stated, "If they require more support than other students from a teacher aide, then that's what we have to do." It can be interpreted that not enough teacher aide hours are provided owing to the lack to funding to employ teacher aides to support students with ASD in inclusive settings. The resolution for all these issues comes down to the allocation of funding. There is little doubt that funding is one of the barriers that has been identified in the failure to support the learning needs of students with ASD. This was confirmed by the study conducted by Sagger et al. (2016) based on research about an Australian autism educational needs analysis, with similar sentiments echoed in the results of the present study.

In conclusion, it can be interpreted that teachers' self-efficacy beliefs can be influenced by the support, or lack thereof, in terms of funding and resources they receive. In Queensland, Australia, the terminology ascertainment is used in government schools to control the levels of funding and resource support given to students with special educational needs (Watson, 2006). In Queensland, there are 6 levels of educational needs of students with special needs, however for those students whose needs are less than level 4 are not given extra support on a regular basis (Parliament of Australia, n.d). Furthermore, the funding for these students is decided by a staffing formula, which has been criticised for not considering the individual

needs of the student (Parliament of Australia, n.d). With that funding, an additional support teacher or teacher aide could be employed, resources for ASD-specific support could be bought or funding could be invested in professional development for teachers, such as attending seminars or conferences related to teaching students with ASD.

5.3.2 Class size and time constraints

Even though the inclusion of students with ASD has many benefits, 7 out of 16 participants cited class size and time constraints as their concerns in providing successful inclusion. Nevertheless, a lack of planning time and a large class size may also influence teachers' self-efficacy in relation to the successful inclusion of students with ASD. Half of the PS participants and three of the RGs showed their concern about class size and time constraints. For instance, Stella (PS) said that teaching students with ASD:

> …was still hard, though, obviously, because you had 25 other students that you still had to work with as well and finding the time to - especially as a practical teacher when you're only in there for four weeks - to try and find that time to initiate strategies and try new things. It was hard to find the time to dedicate time just to get those things working for him amongst all the other students and other needs that were happening in the classroom too.

Stella (PS) also had students with other learning disabilities in her class, and she was struggling to meet their needs. She expressed her concerns as follows:

> So, on my practical course, I had the student with autism, I had a student with intellectual impairment, I had another student with ADHD and I had three more students who were not diagnosed and needed heavy support. It was really hard to know how to juggle all of that and still do all the other things that I had been taught how to do.

Mila (PS) reiterated that:

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I find that the ASD child actually takes a lot of your time. So it's not that

they're not getting your time. It's the rest of the group that misses out on the

quality time and teaching that you're able to give because the ASD child

demands your time. It's difficult sometimes because, again, it's time - having

time to work and provide support to all students.

On the same note, Bella (PS) was in a similar situation to that of Stella (PS). In Bella's class, there were four students with ASD who all had different needs. She stated:

I had four students with a diagnosis, and they're all different students, as well

as the student in your class with a hearing problem, and the student in your

class with an eyesight problem, the student in your class with anxiety issues,

and I don't - and I am a confident teacher, but I'm not 100 per cent confident

that I can cater properly for those students.

She commented that catering to the needs of all students "is a bit hard, because you also have 24 other children". This statement about class size was consistent with Kayla's (PS) interview account as well. Kayla stated: "I guess, in a classroom with 24 students, it's very busy". Therefore, it is difficult to provide equal support to all students.

At the same time Hope (RG) stated that "It's for this very high functioning one it's really challenging having him in a class of 24 - trying to manage him and teach all the other kids and do everything that needs to be done". It was evident that Hope was confident in teaching students in her class who were low on the ASD spectrum. It seemed that she had challenges only with the students who were not highly functioning. Her concern was comparable to that of Stella (PS). In addition, Joy (RG) stated:

It obviously can be very challenging when you've got a whole program and

other children to be addressing. That can take out like a 20-minute part of

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your day. And, whilst it's incredibly important, there's just generally some constraints on our time to be able to do that.

Summer (RG) declared, "To be completely honest, there are sometimes where I don't believe it is in either that student's best interests, or in the best interests of the rest of the class" to include students in inclusive classrooms. Summer further stated that:

It also creates a situation in the classroom where the other 20 or so students are put at a slight disadvantage because they either can't do activities, or so much teaching time is taken up with these one or two students that you can't help the others.

From this, it was evident that some students in the class had difficulties in their class activities, but that the teacher was not able to give them her time, given that she also needed to plan the lessons for students with ASD in the same classroom. It is also time-consuming for inexperienced teachers to modify all instruction for students with ASD. It can further be revealed that the teachers perceived a need for reduced class sizes when including students with ASD and other special needs. It was noted that a large-sized classroom prevented teachers from implementing specific teaching strategies for these students, since some of these students cannot work in groups and take a lot of teachers' time when they are taught individually. Moreover, large class sizes can also hinder the quality of education for all students involved in inclusive classrooms, not only those who are diagnosed with ASD. It can also be perceived that the inclusion of students with special needs, including those with ASD, can only be reasonably done if the class size is small.

In a study by Sharma and Sokal (2016), both pre-service and in-service teachers indicated that lack of time was one of their concerns in teaching in inclusive settings. Thus, having limited time to plan appropriate strategies may also have an impact on teacher self-efficacy in teaching students with ASD in inclusive classrooms, given the diverse nature of today's classrooms, which includes students with all different learning needs and requirements. This result stands in concurrence

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with a study conducted with 32 PSTs by Goodnough (2010) where time constraints were found to be a pertinent challenging factor in the appropriate planning and implementation of the diverse instructional practices, resulting in stress for teachers.

Moreover, owing to the size of the classroom and students with different needs in the class, it is imperative to have a support person, such as a teacher aide, to assist in the daily classroom activities.

5.3.3 Challenging behaviours of students with ASD

It should be highlighted that the participants who were not confident in dealing with challenging behaviours of students with ASD were Bella, Maria and Stella from PS group, and Hope, Joy, Nina and Summer from RG group. These participants were concerned about the challenging behaviours demonstrated by students with ASD. This was consistent with a study by Soto-Chodiman et al. (2012) which found that general classroom teachers in Australia were repeatedly challenged by the behaviours of students with ASD. This may have been the result of teachers' inadequate training and/or lack of experiences and support, which may have had an impact on their self-efficacy in addressing the complexity of the behaviours of ASD.

The following discusses these participants' concerns in relation to addressing the behavioural needs of these students in their inclusive classrooms.

In agreement with Summer (RG), Hope (RG) said, "I didn't have an issue with it (inclusion) until I got my very high functioning one who is very violent, and he hits, kicks, bites. He's non-verbal so that's his way of communicating. He runs out of the classroom." She further commented, "I feel like I'm not able to teach all the other kids as well because I'm constantly worrying about him and wondering where he is." While it is appropriate and a matter of equitable education to have students with ASD in inclusive classrooms, having such a student who has severe behavioural issues can be very challenging to manage. Therefore, it is important to have additional support in such a classroom, mainly for those students who are very challenging.

Bella (PS) stated very strongly that she had difficulty in dealing with behavioural issues related to students with ASD. She said, "I've had students with

autism run out of my classroom. I've had students with autism in my classroom destroy the place from a meltdown." Maria (PS) also faced similar situations in dealing with behavioural issues and was not sure what to do. She commented, "Oh, my goodness, how do you do this?" Thus, it is evident that educating students with significant behavioural difficulties is an extremely challenging matter for teachers. Hence it is important to provide teachers with specific strategies in dealing with students who demonstrate behavioural issues (Roberts, 2007) related to ASD.

Other researchers reported that teachers can feel overwhelmed by the different needs of students in their class (Bryant, Linan-Thompson, Ugel, Hamff, & Hougen, 2001). In such a situation, teachers are likely to feel that they have inadequate training, particularly regarding specific strategies in helping meet their students' needs (Kosko & Wilkins, 2009). The possible attrition rate of teachers is also a matter of concern. For example, Maria (RG) commented that "I didn't have a very good experience on the last practical, so I don't know. I'm sort of wavering as to whether I'll continue or not in some ways. I'm just like oh". Maria strongly believed that she could not teach these students. Her action indicated that she currently lacked self-efficacy.

To explain this, Bandura's (1977) theory of self-efficacy suggests that teachers' beliefs are likely to affect their behaviours and their teaching performance outcomes. Thus, teachers such as Maria (RG) may normally perform an action only if they believe that they can do it. In Maria's case, for instance, she appeared to possess limited capability in meeting the expectations and demands of a diverse classroom.

Stella (PS) stated that "those behavioural issues were stopping us from getting those baselines and getting a true reflection of what they actually could do." From this statement, it can be ascertained that challenging behaviours are likely to be exhibited by these students and that such behaviours can be detrimental to a classroom's learning processes since teachers find it challenging to determine students' actual academic levels, given that most of the classroom time is spent on dealing with behavioural issues, rather than providing academic support. Consequently, if such a situation arises, the teachers may fail in their duties to meet the expectations and to understand the capabilities of these students, which, in turn,

can affect their self-efficacy. This aligns with the work of Bandura (1977), who claimed that failing any task or challenge can lower self-efficacy, and that experiencing an unfavourable performance may weaken one's perceptions about one's capabilities.

Hope (RG) commented, "For the high functioning one, no idea how to manage his behaviour, and to be completely honest nobody else at the school has any idea how to manage his behaviour either." Thus, even the experienced teachers in the school can face challenges in addressing the behavioural needs of students who are high on the autism spectrum. Summer and Hope, both of whom were RGs, presented similar concerns about including students within inclusive classrooms. They had experienced students escaping out of the classroom while they were teaching. To worsen the situation, there was no teacher aide support to assist in handling these challenging students.

Reflecting on this stressful situation, Summer (RG) stated:

I can try either to send the [teacher] aide out or [to] leave the aide in the room while I tried to go outside. The week before, I was in a Year One classroom with no aide and so you're on your own. You can ring the office, but they might not answer the phone. You can't send a student because the other student is outside. It's nerve-racking because you never quite know what to do.

At the same time, Nina (RG) argued: "probably my high-functioning one, I am less comfortable with or less confident in my ability. He seems to have more things that will trigger him to have a bit of a bounce-down than my other low [functioning] little boy." It can be interpreted that Nina was more comfortable in teaching students who are low on ASD spectrum and are more manageable compared to the ones on extreme levels.

Additionally, Summer (RG) said that teaching students with ASD who show challenging behaviours is a "…big problem. Because I don't always know the best way to deal with their issues. So, for instance, a lot of them become quite aggressive,

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and I've never been taught how to deescalate those situations". Summer stated that addressing the behavioural needs of students with ASD within the classroom is a challenge, since she appeared to lack the knowledge and skills in dealing with those behavioural issues.

From all the evidence discussed above, it can be said that dealing with challenging behaviours may have a significant impact on teachers' self-efficacy. Furthermore, challenging behaviours may hinder teachers' abilities to address the academic needs of these students. Hence, it is vital that all pre-service and in-service teachers are skilled in applying appropriate interventions that target challenging behaviours. Therefore, additional training programs must be considered that provide all teachers of students with ASD with the required skills and expertise.

The above results demonstrate that, although the inclusion of students with ASD in inclusive classrooms can be significantly beneficial, it can be challenging as well. The challenges faced within classrooms no doubt can affect the well-being of everyone involved in the inclusive classrooms. To promote equity in classroom environments, it is thus important to address the specific challenges, and this may be achieved by better promoting teacher self-efficacy and preparedness in teaching students with ASD conditions. To visualise this as a reality, all teachers need to be trained adequately to make inclusive classrooms a sustainable success.

5.4 Teacher stress and job-satisfaction

Owing to limited skills and knowledge related to ASD and all of the barriers mentioned above, it is highly likely that teachers may feel less satisfied in their career, which may affect their health. Teacher' self-efficacy is a critical contributor to their job satisfaction (Caprara et al., 2003). Hence, teachers who face greater stress/pressure may have lower self-efficacy beliefs in their abilities to teach students. This may also lead to poor teacher-student rapport and ineffective teaching (Kokkinos, 2007). Two of the PSTs and two of the RGs mentioned that the inclusion of students with ASD in inclusive classrooms can "affect the well-being of everyone. "This commonality revealed the fact that, despite the subtly different experiences or exposures that the two groups had received with respect to their knowledge and skills about students with ASD, the wellness of everyone could be a matter of concern, and

hence needed to be explored. To elaborate this crucial point, it is next explored from the PSTs' and RGs' perspectives.

According to Mila (PS) and Anna (PS), teachers generally feel stressed when it comes to teaching students with ASD in their classrooms. It was evident that teachers were stressed owing to their lack of knowledge and confidence in dealing with students with ASD, especially when limited support is provided. Furthermore, Anna and Mila argued that if Special Education Program (SEP) units are removed there will be greater inclusion of students with ASD, and consequently this will place more stress on these teachers. Hence, it is important that teachers are well-prepared, confident and willing to ask for assistance in teaching students with ASD in their classrooms to avoid unnecessary stress and anxiety.

It was illuminating to interview Hope (RG), who had a very highly functioning student with ASD in her classroom. This student had significant behavioural issues as well, and this was what Hope highlighted in terms of her concerns about the inclusion of such students: "I get where they're coming from with this whole inclusion thing, and I do think it's really nice, but now that I have a kid like this I feel like it's really affected my well-being." She commented further that it affected the well-being of the other children in the classroom and that of the teacher aide: "It really affected my teacher aide's well-being. It affected the well-being of the kids in the classroom."

Research evidence shows that teaching is one of those professions where teachers are expected to undergo significant stress and subsequent burnout, mainly when they are attempting to promote the inclusion of students in their inclusive classrooms, especially those with special needs, and particularly those with ASD conditions (Boujut, Popa-Roch, Palomares, Dean, & Cappe, 2017). Further evidence in this respect has demonstrated that, in the absence of substantial teacher education during their pre-service education, teachers can become more susceptible to burnout (Boujut, Dean, Grouselle, & Cappe, 2016; Emery & Vandenberg, 2010). This indicates that the teachers' stress levels may also influence their self-efficacy beliefs, and their ability to deliver the learning materials successfully to all their students. This is because, the lower their beliefs about their capabilities in teaching these types of students, the more stressed such teachers are likely to feel.

5.5 Not all full inclusion is successful

While some students with ASD conditions can thrive in inclusive classrooms, there can be some students who cannot cope within a fully inclusive environment. According to Summer (RG), "[T]o be completely honest, there are sometimes where I don't believe it is in either that student's best interests, or in the best interests of the rest of the class." Summer elaborated that "some participation and some exclusion, I think, does them wonders, but maybe many situations it puts them under a lot of stress." Thus, inclusion affects not only the classroom teachers, teacher aides and the rest of the students in the classroom but also the well-being of all students with ASD conditions. Therefore, to address this issue, one may need to consider some degree of inclusion and that some degree of withdrawal of students from the classrooms to support them may be beneficial, and this can depend on the number, severity and type of students with ASD conditions.

At the same time, Bella (PS) stated that "we cannot just put students with ASD in inclusive classrooms and expect them to cope the same as a normal child because they can't." According to Joy's (RG) "the successful inclusion is quite difficult for a child who needs severe intervention, which can be challenging for the school to be able to meet her needs all the time." Some students with ASD conditions are not able to cope with the demands of a classroom, owing to their unique needs, which are likely to lead to some additional degree of stress to both the student and the teacher. This may depend on the specific types of activities in which students may be involved within classrooms. For example, such students have difficulties in managing social interactions and are not able to filter classroom noise, and they face difficulties in adapting to classroom routines, which may then lead to a meltdown. This was indicated by Summer (RG), who stated, "I see some students who end up sitting in the corner with their hands over their ears because they cannot participate with the amount of noise that's going on in the classroom." From this account, it was evident that some students with ASD conditions can become emotionally disturbed in noisy learning environments, which can eventually lead to meltdowns, non-compliance and frustrating behaviours.

Students with severe ASD conditions are likely to interrupt the class and to cause some degree of disturbance owing to their unique behaviours, which may have

a negative impact on the rest of the students in the same classroom. For instance, Kahila (RG) stated that "it's difficult for the other children, particularly when there's a lot of yelling and screaming, and throwing stuff on the floor." It can thus be construed that, depending on the severity of the student's behaviour, teachers are likely to ask for additional help to remove the student from the classroom until he or she has calmed down.

Reflecting a similar sentiment, Bateman and Bateman (2002) stated,

Inclusion implies that students will be taught outside the regular education classroom only when all available methods have been tried and failed to meet their needs. If a student is pulled out of the general education classroom for instruction in another placement, the intent is for the pull-out to be temporary and for the student to be reintegrated into the general education classroom as soon as possible. (p. 2)

It is therefore clear that, for the safety and well-being of the student and everyone else involved in the classroom, such actions are necessary.

Bella (PS) had similar views to those of Summer (RG), and said that students with ASD were "…removed from that mainstream classroom and not as a way of segregating them, but for their safety because children with autism can be quite unsafe at times and sometimes six hours in a classroom is just - they can't handle that." Both Bella and Summer stated that some students who were on the high end of the spectrum of the ASD condition were separated only for their safety and well-being. It should be noted that these students were not fully separated, but only partly when the teachers felt that they were not able to deal with the noise or with a change in the routine of the classroom. Like Bella, Summer said that some students with ASD conditions find it difficult to cope in inclusive classrooms:

I think some ASD students find it very difficult to participate in a lot of things. I think that you can give them the opportunity to participate and encourage them to do so, but I think in some instances it doesn't help them

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[to] try to force them to participate because it makes some of them very

uncomfortable, and then [that] can lead to that meltdown situation.

It was thus evidently felt that teachers should be willing to accommodate these students in their classrooms by encouraging and supporting them rather than by forcing them to participate. For example, for a student who is not able to cope in a noisy classroom, there should an agreed quiet place for this student to go if they are feeling anxious. Therefore, teachers must seek appropriate support within the school community when they encounter a challenging student in their classroom and feel that they are not provided with enough support.

5.4 Chapter summary

This chapter has outlined the primary themes that emerged from the data analysis in response to the first research question: "What were the PSTs' and RGs' views of the inclusion of students with ASD".

Using both inductive and deductive analysis of qualitative data, it was found that both groups of participants' knowledges of inclusion did not translate into practice. It was found that both sets of teachers generally had a good understanding of inclusion and of the reasons behind the need for inclusive practices, but that a significant number of those participants felt that they lacked the EBP strategies required to accommodate these students successfully in inclusive classrooms. A significant point raised in their interviews was that EBPs were not very well understood; therefore, the participants lacked significant awareness in implementing such important practices.

Furthermore, although having students with ASD in inclusive classrooms can be advantageous in more effectively supporting the learning needs of such students, especially providing socialised, equitable and inclusive learning environments, both sets of teacher participants revealed some degree of concern. Additionally, according to Forlin et al. (2014), there is a relationship between teachers' concerns and their self-efficacy for inclusive practices.

Barriers of inclusive practices such as lack of funding, large class sizes and time constraints, and dealing with complex behaviours of students with ASD were

expected to negatively influence a teacher's self-efficacy in teaching these types of students. A recent study conducted by Wilson and Land (2019) has also identified time constraints and inadequate resources as significant barriers in teaching students with ASD in inclusive classrooms. In fact, the teachers experienced an extreme amount of stress when they were required to teach students with challenging behaviours.

This chapter has shown that the inclusion of students with severe ASD conditions with challenging behaviours affects not only teachers, leading to heightened stress and anxiety, but also the students with ASD conditions, the teacher aides and the rest of the typically developing students in the same classrooms. Some students with ASD are not able to cope with the expectations in inclusive classrooms owing to their unique learning characteristics. Because of such challenges, students can become relatively anxious and therefore demonstrate behavioural issues, such as screaming, crying and running out of the classroom. This is likely to cause some degree of disruption to the rest of the students in the classroom. Considering these issues, it becomes necessary, from time to time, to separate such students from the rest of the class until they are relatively calm to integrate back in again. Such actions are important for the overall well-being and safety of everyone involved in the classroom environment.

If teachers experience challenges, such issues become a potential route to ineffective teaching, and therefore this phenomenon needs to be explored further. Furthermore, according to Avramidis and Norwich (2002), "teachers beliefs and attitudes are critical in ensuring the success of inclusive practices since teachers' acceptance of the policy of inclusion is likely to affect their commitment to implementing it" (p. 130). Finally, despite the potential benefits of the inclusion of students with ASD in inclusive classrooms, it can be challenging to those teachers who have limited skills and knowledge to teach students with ASD in inclusive classrooms. Finally, it is important that classroom teachers coordinate with their mentor teachers, administration members, support teachers and teacher aides in finding solutions for classroom behaviour management, class size and time constraints sooner rather than later.

Chapter 6 Teachers' self-efficacy and preparedness

6.1 Chapter overview

This chapter examines the PS and RG teachers' self-efficacy and preparedness in addressing the academic, behavioural and social needs of students with ASD in their inclusive classrooms. Evidence shows that there is a lack of studies conducted specifically to examine teachers' self-efficacy in teaching students with ASD (Corona et al., 2017). The chapter explores the second research question, as stated as:

(2) What are the pre-service teachers' and the recent teacher graduates' self-efficacy beliefs and sense of preparedness in educating students with ASD conditions, and the factors leading to their self-efficacy and sense of preparedness?

This research question was explored to gather evidence and critical insights to explore the particpants' self-efficacy in addressing the academic, behavioural and social needs of students with ASD conditions. For an optimal learning process to occur, teachers must be qualified to address these needs of students with ASD. Adequate training and prepardness will lead to efficacious teachers who believe in their self-efficacy in addressing the needs of students with ASD and succsefully accommodating them in their classrooms. However, in this chapter I have also looked at factors that may be useful in develoing teachers' self-efficay in teaching. According to Tschannen-Moran and Hoy (2001), research examining how teachers' efficacy beliefs are formed and reinforced and their influence on student attainment "could provoke significant changes in the way teachers were prepared and supported in their early years in the profession" (p. 802). If we feel that enacting equal education opportunities for all students is a necessity, then investing in this research phenomenon needs to be a priority.

Furthermore, and by contrast, there is a general agreement that some teachers are rather challenged to implement a successful inclusive process, plausibly owing to a limited set of skills and knowledge about teaching students with ASD. Moreover,

the roles and responssibilites of classroom teachers are to ensure the quality education of all students in their classrooms. Therefore participants' perspectives on their self-efficacy and prepardness in teaching the rest of the students in their classrooms were also explored in this study. The careful examination of the data revealed the following themes and subthemes presented in Table 6.1, followed by the discussion and interpretation of these themes and subthemes.

Table 6.1: The themes and sub-themes related to research question 2.

Theme: (Section 6.2)

Factors influencing self-efficacy and preparedness

Sub-theme: More classroom experiences and years of teaching

Previous involvement with individuals with ASD Guidance and support from mentor teachers

Support from teacher-aides, colleagues and administration

Liaison with parents and other professionals

Theme: (Section 6.3)

Participants' self-efficacy as teachers in general classroom teaching

6.2 Factors influencing self-efficacy and preparedness

It was found from qualitative data that, for the pre-service (PS participants, the total number of times that they mentioned that they were "not confident" was six, which was higher than the rest of the categories. Only two PS cases (Anna and Kennedy) stated that they *were* "confident". Chantal (PS) also said that she was confident, yet she was only "moderately confident".

To elaborate, five cases of the RG interviewees said that they were "confident", and three of them said that they were "moderately confident". Hence, the cross-case analysis of the qualitative results showed that the RGs were generally more confident in addressing the academic needs of students with ASD conditions placed in their classrooms than were the final year PS teachers. While the exact cause of this is not clear yet, this result can perhaps be attributable to a greater exposure to

real-life teaching situations, and perhaps to a deeper understanding of the teaching pedagogies that comes with more experience.

Further, I noted that almost half of the participants from both groups stated that they were "confident" in addressing the behavioural needs of students with ASD, and the other half indicated that they were "not confident". There were only two cases (one PST and one RG) who mentioned that they were "moderately confident." Overall, it can be interpreted that both the PSTs and the RGs were reasonably confident in addressing the needs of students with ASD in inclusive classrooms. The within case and cross-case analyses showed that nine out of the 16 participants mentioned that they were "confident" in addressing their students' social needs. Of these nine participants, four were the PSTs and five were the RGs. On the other hand, five out of the 16 participants stated that they were "not confident". Three of them were the RGs, and two were the PS teachers. Only one PS teacher said that she was "moderately confident".

6.2.1 More classroom experiences and years of teaching

Half of the participants in the interviews felt that they required more classroom experiences to gain confidence in addressing the academic, behavioural and social needs of students with ASD. Callaway (2014) indicated that real-life teaching in classroom develops teachers' interest in teaching students with ASD. Hands-on experiences based on practical experiences are also consistent with the findings from Morrier et al. (2011), who examined teacher education for students with ASD. Some of the evidence from the participants' voices in relation to this crucial point from this study is presented below:

Bella (PS) said:

I feel like the more classroom experience we have - like that more hands on, that more real-life experience with these students will help us better understand how to cater for their diverse needs. I think everybody should do themselves a favour and get themselves in the classroom. The only way to learn is by getting into that environment and getting that hands-on learning.

Further, Kayla (PS) commented, "I think I get better as my experience goes on in my practical sessions at university. I think you get better and better with more experiences." Mila (PS) said that, from "my course, you don't get a lot of the hands on. You don't get the life experience element of it. You get the theory." From this comment, it can be interpreted that teachers do need the theory component, but they also need to know how to apply that component in their classrooms. Having that classroom experiences in teaching students with ASD encourages teachers to reflect on their teaching practices in ways that may promote powerful teaching. Similarly, field experiences are important in shaping teachers' beliefs about students with ASD (Busby, Ingram, Oliver, & Lyson, 2012). During fieldwork practicals, PS teachers gain the opportunity to interact with students where they get to understand more about the complexity of ASD.

Furthermore, Mila (PS) commented,

I knew the theory of it, but I never actually got to do it myself. What I've learnt at university, probably extremely limited and not prepared to educate – well, not at least within the first two years of teaching.

Additionally, Kahlia (RG) said that her confidence and preparedness in teaching students only improved through "practical experience of actually having these students in the classroom." She further emphasised that "nothing prepares you until you actually have a student with ASD in your classroom." Kahlia commented that "learning on the job with them is probably the best thing," and she further said about the courses at the university level: "In general, it would have been good to have more courses where there were more practicals regarding how to teach different things." Another participant, Summer (RG), mentioned about her practical experiences and wished that the practicals had been spread out, so that she could have spent more time in school to gain real-life experiences of teaching students.

The practical experiences of working with different students with ASD with diverse needs helps to broaden the novice teachers' understanding of the ASD phenomenon (Leblanc et al., 2009). Furthermore, it was found in this study that years of classroom teaching influence teachers' confidence in addressing the needs of

students with ASD. Some examples of the quotations by participants were as follows:

> Kahlia (RG), who had taught for three years, commented,
>
> I found initially quite a steep learning curve. I feel quite confident now. I guess the strategies I've picked up and learned along the way and how to deal with the behavioural management of these students. Yeah, so I feel quite confident.

After gaining some experience (primarily as a recent graduate teacher), Kahlia appeared to feel more confident, given that she had had three years of experience in teaching students with ASD conditions. Hence, it can be interpreted that the immediate experiences gained after a teacher education program, are likely to influence a teacher's self-efficacy beliefs, leading to a more confident teaching experience related to students with ASD conditions within a mainstream classroom. Undoubtedly, the greater is the experience, the higher can be the self-efficacy belief, to concur with Bandura's (1977; 1997) theoretical framework regarding self-efficacy.

On the same note, Lillian (RG) commented: "I'm quite comfortable with [the] strategies that I currently use. I get good results from those [strategies]. A lot of it was through experience". A plausible interpretation of this statement is that Lillian had a high degree of self-efficacy, given that she believed that the strategies that she used with her students could lead to positive results, and that she had developed her confidence through a greater experience in teaching students with ASD conditions. This notion appeared to be consistent with Bandura's (1997) theoretical framework about the enactive mastery experiences as an important factor in determining a teacher's success or failure. Mastery experience is therefore the most influential factor in developing an individual's self-efficacy, whereas failure can undermine it (Wu, 2016). In Lillian's case, there was success in her classroom with the strategies that she was implementing, and therefore she felt confident.

The general conception that experience and the number of years of teaching service are likely to influence positive self-efficacy beliefs appears to be consistent with one study conducted by Gregor and Campbell (2001). In this study, general classroom teachers, particularly with no specific training in special education, but with greater experience, were "significantly more confident about coping with typical autism behaviours" (p. 202). Furthermore, it can be interpreted that field placements and years of experience enable PS and in-service teachers to develop their self-efficacy in making improvements in their teaching beliefs, behaviours and approaches in teaching students with ASD.

Moreover, teacher classroom experiences in teaching students with ASD are vital given their unique needs. Therefore experiences in working with individuals with ASD can assist teachers to shape their views about the inclusion of such students and make relevant adjustments to their teaching behaviours and styles. Teacher experiences may further help teachers to plan and make an appropriate judgement about their students and strive for success in the classroom. Moreover, this also reflects the findings of a study conducted by Gregor and Campbell (2001) whereby experienced teachers were "significantly more confident about coping with typical autism behaviors" (p. 202) than non-experienced teachers.

Experienced teachers with more years of teaching may have acquired positive mastery experiences, as theorised by Bandura's (Bandura, 1986; Bandura, 1997) self-efficacy theory, whereby teachers' experience with students with ASD was positive, and hence a strong sense of self-efficacy was established in providing successful inclusion for such students. More years of teaching and experiences provide a wealth of mastery experience to develop teacher self-efficacy since they are equipped with more information about how best to teach students with ASD. On the other hand, less experienced teachers may not have that source of information about ASD, and hence may feel less efficacious and prepared to teach such students.

6.2.2 Previous involvement with individuals with ASD

The results from this study found that the participants' self-efficacy and preparedness in teaching students with ASD may also have been increased through their previous contact or involvement with individuals with ASD outside the

classroom environment. For example, Anna, Stella and Kennedy, all PSTs were parents of children diagnosed with ASD. Anna had also worked as a teacher-aide with students with ASD in the past. Maria (PS) had a friend who had a child with ASD, so she was more aware and knowledgeable about the needs of a child with ASD through contact with her friend. Mila (PS) had a grandson who had been diagnosed with ASD. None of the RGs had any prior acquaintance with individuals with ASD. Those participants who had life experiences through previous contact with individuals felt relatively confident in addressing the academic, behavioural and social needs of students with ASD.

My study also demonstrated that being a parent of a child and a teacher of students with ASD had greater impact on teachers' self-efficacy and sense of preparedness of teaching students with ASD. To the researcher's knowledge, there was limited literature found in this area, specifically about teaching students with ASD. However, a study conducted by Forlin et al. (2009), from a different perspective, found that previous involvement and contact with students with special needs in terms of previous training or teaching these students resulted in more positive attitudes and fewer concerns regarding teaching such students. Quotations from the relevant interview extracts are presented below:

Anna (PS) said that she was confident in addressing the academic, behavioural and social needs of students with ASD:

> Because I've got two children of my own. I've also worked as a teacher aide at a special school, so I'm able to actually see it a lot easier than what some other teachers would. I'm a lot more confident, and I can actually see it half the time just going into a new school and a new class. I can pick it up straight up.

Kennedy (PS) said, "I feel extremely confident, as I have a son with autism, and I currently work with a student who has autism." She further commented that she

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had learned various ways of addressing the needs of students with ASD ″through trial and error″ with her son. On the same note, Stella (PS) articulated that,

> I feel confident. I have a son who has autism, so my youngest son has autism, so I felt like I had a broad range of strategies that I could use, I've learnt to use with my own son, to engage with him and connect with him, and different strategies I could use for different things in the classroom.

Kennedy (PS) further stated,

> I think if I didn't have my son I would have no idea what to do, because I still had days where I still wasn't really sure what to do as a teacher, and I did really rely on what I knew from my personal life to try and make it work. So I think – yeah, I think if I didn't have my own son and all the things I've learnt through that journey with him, I think I would have absolutely no idea how to try to include a student in a mainstream classroom.

In contrast to the above experiences, even though Stella (PS) said that she felt confident in addressing a wide range of strategies to teach students with ASD in her classroom, it was challenging to do so owing to time constraints with a large sized classroom. Moreover, Stella was not confident in addressing the academic needs of students with ASD; however, she was confident in meeting their behavioural and social needs:

> Probably more in the academic I didn't feel as confident in knowing if I was making correct judgements because that's not something I'd done with my son. Like I said, with the students I had experience with on practicals, we had a lot of trouble getting them to engage in the activities. So then it was hard to make a judgement on what their actual level of academic ability was, because it was more a behavioural [situation].

To reflect on the above account, it appeared to be a difficult matter to evaluate the academic abilities of students with ASD conditions given their unique characteristics with diverse learning needs. Given that individuals with ASD are likely to have a different academic profile from those without ASD, teachers must have the relevant skills and knowledge to coordinate the interventions plans to suit those students' learning needs.

This indicates that having personal acquaintance with an individual with ASD may influence teachers' self-efficacy beliefs in teaching these students in classrooms. This is because these participants had prior personal experiences and more exposure to ASD in their daily life, and accordingly they felt more comfortable in accommodating these students in their classrooms. Further, it is evident that personal experiences influence self-efficacy beliefs in teaching students with ASD conditions (Moore-Hayes, 2008). From a different perspective, the findings of this study showed that both PS and in-service teachers who did not have any contact with an acquaintance diagnosed with ASD still benefited from completing a special education course.

Mila (PS) said that she had had life experiences that had helped her in many ways to deal with these students, but that, for those teachers who lacked such experiences, it was important to give "teachers the tried and tested strategies and [to help] them to implement them". However, it was concerning if teachers opted not to complete special education courses or further professional development in teaching students with ASD to assist them in addressing these students' academic, behavioural and social needs in mainstream classrooms.

6.2.3 Guidance and support from mentor teachers

According to Bandura (1986, 1997), *vicarious experience* is one of the sources of self-efficacy that an individual can master. During vicarious experiences, teachers model their mentor teachers or colleagues through observation of success or failure. Through vicarious experiences, PSTs model the classroom teachers' style of teaching students with ASD. Therefore they need to form a close relationship with their mentor teachers. According to Sunjin (2010), working together with classroom

teachers provides self-efficacy to PSTs in the "form of vicarious experience (modelling) and verbal persuasion (positive feedback and encouragement)" (p. 4).

In accordance with Bandura's (1997) self-efficacy theory, vicarious experiences are one of the origins of self-efficacy that may "alter efficacy beliefs through transmission of competencies and comparison with the attainment of others" (p. 79). Furthermore, when teachers see their mentor teachers being successful in teaching students with ASD, their self-efficacy is enhanced. For example, Bella (PS) mentioned that "anything that I have learned as a strategy in the classroom has come from my mentor teachers". Kayla (PS) also confirmed that "you learn new techniques and strategies from mentor teachers. I think it's not something you can really learn from a text book; it takes practice." It can be said that through classroom exposure PSTs can model various teaching styles from their mentor teachers that may motivate them and help to build their confidence in addressing the needs of these students.

Extracts from Bella (PS) and Kayla (PS) demonstrated that authentic learning takes place in the classroom with the guidance of a mentor teacher where they get to apply theoretical understanding to practical realism. From their accounts, it can be interpreted that mentor teachers added substantial value to their teaching skills. Hence, within classroom settings and through guidance from their mentor teachers, PSTs gain opportunities to enhance their foundational knowledge, skills and beliefs in their ability to "organize and execute the courses of action required to produce certain outcomes" (Bandura, 1997, p. 3). Additionally, Summer (RG) articulated that it would be helpful if they were able to spend more time in the classrooms with students with ASD:

> I really wish that they had spread the practicals out, or at least had the
> addition of a one day a week in a school spending time with a mentor in a
> classroom. Maybe not making it so formal where your mentor has to fill out
> all the paperwork and all of that. Just to give you that hands on experience,
> because nothing teaches you more than actually being in the classroom and

seeing how the teachers deal with these students. Unfortunately, we come

out of university and that's our first experience.

It is also important that teachers spend a substantial amount of time in the classroom. Therefore it is important that all PSTs must have a mentor who is experienced in teaching not only general classroom students but also students with ASD. As stated by Williams (2014), "[the] teacher mentor–mentee relationship and the opportunities for observing mastery teaching, practicing new knowledge in a safe setting, and developing relationships important to the profession are critical areas to the development of sound teaching practices" (p. 74). Under the guidance of a cooperating mentor, teachers' efficacy and preparedness in addressing the academic, behavioural and social needs of students with ASD may be enhanced.

Evidence from the scholarly literature also demonstrated that teaching fieldwork demands quality mentors to train pre-service teachers to reduce the large early career teachers' attrition rate and to offset the relatively limited numbers enrolling in teaching (Williams, 2014). Anna (PS) stated that, without that training and support, "teachers are not going to stay there long," and the "student teacher may actually end up failing in his/her teaching skills because he/she does not know how to handle" students with ASD. On the contrary, according to Maria (PS), she had not had a very good practical placement experience in her classroom teaching, and she commented further, "I don't know. I'm sort of wavering as to whether I'll continue teaching or not in some ways."

From the interview extracts with Anna (PS) and Maria (PS), it can be assumed that both did not feel confident in their ability to teach students with ASD in mainstream classrooms. This could have been due to a lack of support from their mentor teachers or to inexperienced mentor teachers who themselves were challenged in meeting the needs of these students, given the time constraints and class size and the requirements of other students with various learning needs. Appropriate support, in the form of feedback, encouragement and motivation from an experienced mentor teacher, adds value to the classroom practices, and may also help to improve teachers' self-efficacy and preparedness in teaching students with ASD.

According to Tillman (2005), mentoring first year teachers is an important strategy for overcoming the issues of teacher Attrition. Moreover, it can be said that proper guidance and training by mentor teachers can be effective precursors for building self-efficacy and competence in addressing the academic, behavioural and social needs of students with ASD in mainstream classrooms. It can therefore be interpreted that a teacher's self-efficacy may be developed more effectively through learned experiences, and by observing other teachers and modelling their teaching behaviours. This notion appears to be in harmony with the proposition of Bandura's (1977) "Theory of Self-efficacy" that postulates that self-efficacy beliefs can be increased over time and improved consistently through vicarious experiences.

Vicarious experiences are likely to occur more effectively when an individual is probed to model a successful task from someone else's approach. In other words, when a PS teacher observes a classroom teacher in successfully completing a task with sustained efforts, that individual is more empowered to believe that he or she also possesses the abilities to complete the same task successfully (Bandura, 1997). During the practical experience, mentor teachers play a critical role in supporting "pre-service teachers in connecting theory and practice and reflecting on their experiences to broaden skills and knowledge in working with diverse groups on a variety of issues" (Williams, 2014, p. 75).

Hence it can be assumed that effective mentors assigned to the PSTs may directly influence teacher self-efficacy and job satisfaction (Callaway, 2014), whereby PST can witness and experience their mentor teacher's success in teaching (i.e., vicarious experience). Consequently, seeing another teacher accommodating the students with ASD conditions successfully within inclusive classrooms is likely to improve teachers' confidence levels.

6.2.4 Support from teacher aides, colleagues and administration

From the findings of this study, participants felt more comfortable in teaching students with ASD in their classroom when the schools provided support. The data from the interviews suggested that these supports can be in the form of teacher aides, colleagues through team teaching, and members of the school administration. Nina (RG) commented that "if you've got the support behind you to be able to deliver a

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curriculum that meets their needs, you would feel more confident." Participants felt that teacher aide support was helpful in classroom behaviour management and in supporting classroom activities (Mahbuba, 2015). According to Idol (2006), without additional support to teachers, it is challenging for teachers to teach students with a disability to study in an inclusive classroom.

Similarly, it is difficult for classroom teachers to accommodate students with disabilities without extra support in the classroom. This is mainly because of the classroom demands such as large sized classrooms, time constraints and accommodating the diverse learning needs and responsibilities of the rest of the students within the mainstream classrooms. Some examples from the interviews are discussed below:

Anna (PS) mentioned that "we teachers were finding it quite hard because, not having a teacher aide there all the time, we do struggle." Anna felt that inclusion may work if students with ASD or special needs have a teacher aide in the classroom for additional support. Bella (PS) articulated,

> Although students with ASD come to the classroom in a familiar environment, with familiar people, they still need extra support to gain the benefits of mainstream learning. They don't have the skills, they don't have the ability to cope in mainstream classrooms the same way as other students.

Some students with ASD cannot work independently in mainstream classrooms; therefore additional, one-on-one support is required to provide the level of assistance that they need. In this case, teacher aide support is a must in such classrooms. Kennedy (PS) said, "If they require more support than other students from a teacher aide, then that's what we have to do." From this extract, it can be interpreted that teachers' self-efficacy in teaching students with ASD can be further enhanced through classroom support with the assistance of a teacher aide.

Kahlia (RG) said that she would be more confident if there were more support provided, "particularly when the student is quite severe, to just have a teacher aide come to your room a couple of times a day, just sit in for half an hour" with challenging students. Nina (RG) stated that she received two sessions of support with a low-functioning student, "which is really great." Nina felt confident in her

ability to address the needs of students with ASD within the mainstream classroom. She stated, "I feel in the school I'm in now, I definitely have a lot of support…, and people that are approachable and are willing to help me if I've got any issues with how to deal with students with ASD." Moreover, if students and teachers gain the right level of support, it adds value to the classroom teaching.

Summer (RG) also said that having a teacher aide "would help them heaps." During extreme behaviours, "if they have a support that is simply for them, then you can ask the teacher aide to remove them till they calm down or take them for a walk or work with them at the back of the class." When teacher aide support within a mainstream classroom is used effectively, it benefits not only the teacher in sharing parts of workloads but also the student in achieving success.

On the other hand, from RGs' perspectives:

Joy (RG) stated,

I guess I was learning with the child about what intervention we needed to do. I probably wasn't – I think I did a good job of managing his needs, but [I] needed a lot of support within the school environment to achieve that.

Joy (RG) added that she had a "unique kind of model" at her school that had been "running for two years which is called a team teacher role. Every year level has what we call a "team teacher" – other people responsible to come in and support us with children with needs." This approach is useful where both teachers share teaching responsibilities within the mainstream classroom. Supportive team teaching is imperative for building teacher self-efficacy among teachers. During team teaching, teachers work together on planning for the day, and/or on addressing any concerns. This statement was echoed by Voltz, Brazil, and Ford (2001), whereby teachers within the team collaborate on concerning matters, and on appropriate classroom instruction and structure within the inclusive classroom students with disabilities.

Being in a strong team may increase teachers' self-efficacy; however, this not always the case. This is because, if teachers perceive their teaching skills and

knowledge are lower than those of their colleagues in the team, they may fail in their own self-efficacy in their ability to teach students with ASD. Hence, it is theorised that individual teacher self-efficacy and collective teacher efficacy as in teaching teams are two different but correlated constructs (Skaalvik & Skaalvik, 2010). On the other hand, teamwork and collaboration are essential elements of inclusive practices (Lindsay, 2007), whereby teachers receive enough time for planning and reflecting on one another's teaching (Hunt, Soto, Maier, & Doering, 2003).

Support from the school administration is also a predictor of developing teacher self-efficacy and preparedness. Nina (RG) and Lillian (RG) mentioned that they both had very supportive administrative teams who had always provided support whenever needed. Bella (PS) echoed this positive view about the support from the school, mainly from the administrative side. Bella articulated,

> If you're supported by the school, whether that's the inclusive classroom or
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> the special education unit or the principal or the deputy [principal] – if you
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> have the support from above, I think your confidence level changes. Through
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> going from different schools – so going from private schools to public
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> schools and going from a small public school to a large public school, I see
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> the difference in support, which also has – even as a practical student, it also
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> has an ability to affect my confidence.

Bella (PS) suggested that that self-efficacy and preparedness in "dealing with those children's behavioural issues and their social issues also [come] down to the level of support you receive from the school." Further, Mila (PS) argued that, when the student is provided with additional support in any way, she mentioned, "I feel comfortable that I can support a child in that way, but a child that's not getting any support I find is – it's an uphill battle for teachers." Finally, it is important that teachers are provided with relevant support, so that they can deliver effective education to students with ASD. Support provided to such teachers may positively impact on their attitudes towards the inclusion of such students (Showalter-Barnes, 2008). Moreover, support provided to teachers may help them to accomplish a strong

sense of empowerment whereby they feel less stressed in dealing with challenging students with ASD.

6.2.5 Building rapport with and knowing your students

To address the academic, behavioural and social needs of students with ASD in inclusive classrooms, the primary role of all classroom teachers is to build a positive rapport with students with ASD. Rapport means building positive relationships with students by engaging with, motivating, encouraging and interacting with them, and simply understanding their needs and requirements for successful learning in mainstream classrooms. This can be achieved only if teachers know and understand their students' needs well so that they gain a further insight into their personalities. By interacting with students, it is also important that teachers develop empathetic relationship with students with ASD, so that they can feel a sense of belonging in mainstream classrooms. This is because each child with ASD displays different characteristics and has different abilities and needs.

For example, Kaylia (RG) stated, "Each child is different, and you really have to do your background and do your research on that child to work out what works for them. What works for one doesn't necessarily work for another." On the same note, Nina (RG) said, "It is important to know your student well enough to support them academically". Nina elaborated, "I think getting to know the students, and regardless of whether it's ASD or not, you need to really know the students and know where they're at to know how you can support their academic learning."

Similarly, Kahlia (RG), Bella (PS) and Lillian (RG) argued that "nothing prepares you until you actually have a student with ASD in your classroom." Bella (PS) commented, "You actually really got to know that child." Lillian said, "Until you actually know the kids" and what strategies works for them, you will not feel confident. Cynthia (RG) stated,

> I think it – a lot comes down to knowing your students and what works for
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> them, because all three of mine have different needs you need to make
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> accommodations for, and, once you know what works for them, what trips

them and what makes them – what motivates them – if you can implement those.

All these comments mentioned about agreed with Taylor and Fisher (2010), who articulated that it is "important to have a sense of who the child is – his current skills, his age, and his general learning readiness in order to make informed decisions about what and how to teach" (p. 52). In an inclusive education system, there is no doubt that the teachers are responsible for adapting their teaching styles to their students' learning styles (Gunn & Delafield-Butt, 2016). Hence it is critical to know the students' interests and backgrounds reasonably well to support them effectively. Building a close rapport or warm relationships with students with ASD may make them feel comfortable in inclusive classrooms, which can reduce the chances of aggressive behaviours.

Teachers may also feel at ease when they know who their students are and what are their triggers in relation to extreme behaviours, how to support them for their academic, behavioural and social needs, and how to calm them down during meltdowns. For instance, Cynthia (RG) articulated that during her initial teaching practicum she faced a student with ASD who displayed extreme behaviours. Cynthia further said,

As the weeks progressed, I got to know the student. It became a little – I wouldn't say comfortable – I wouldn't say it was easier, but more settled, perhaps. I then was more prepared – I knew what to look out for that if we were going to have a meltdown.

Once Cynthia (RG) had established a positive rapport with her student, she felt more confident in supporting him in her classroom. Initially, she stated that she felt:

…very nervous, very apprehensive about the whole thing, but now I know this particular student, how he reacts and how to get to work with him, with the accommodations. I am feeling more confident and I'm actually in my

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mind thinking, "Well, if I'm offered the same position next year, I would be more than happy to have him in my class, because I know what he's like now".

Therefore it can be interpreted that, once teachers get to know their students well and where they are in terms of their academic, behavioural and social needs, they feel more confident to support them in these areas. Further, it is necessary to form a close working relationship and rapport with students with ASD to gain insights into their characters.

Additionally, identifying students' triggers leading to extreme behaviours is also important, and this can be accomplished if teachers are aware of their students' triggers. This is one of the potential challenges faced by casual relief teachers or PSTs, as they do not know their students well given the short time spent with them. Hence it is important that the school provides some sort of induction program for these teachers with the help of mentor teachers and parents of students with ASD discussing the profiles of the students who are diagnosed with ASD.

Certainly, for the successful inclusion of students with ASD, it is important to build a positive rapport not only with students but with parents as well. This perception of building rapport is consistent with inclusive pedagogy (Florian & Black-Hawkins, 2011), which focuses on enhancing the learning environments for all students (Lindsay, Proulx, Scott, & Thomson, 2014). In addition, a number of behavioural studies (Bambara, Gomez, Koger, Lohrmann-O'Rourke, & Xin, 2001; Robledo & Donnellan, 2016) demonstrated that building "rapport" is a "precursor or warm-up strategy for establishing effective interventions" (p. 226). Additionally, if teachers build good working relationships with their students, then their efficacy in teaching these students can be enhanced.

Parent liaison and liaison with other professionals are equally important to address the academic, behavioural and social needs of these students. However, further research needs to be conducted in this area. This study revealed that participants who knew their students and their family backgrounds well felt more confident and prepared to teach students with ASD in their mainstream classrooms.

Kayla (PS) stated:

If I had a new classroom, with someone with ASD, I would have to get to

know them and their family, and read up on some strategies, because I

wouldn't – off the top of my head, I wouldn't have any ideas of my own.

Kayla (PS) was keen to broaden her awareness of different strategies by doing further research and by reading about particular aspects of autism. This is the first and foremost aspect that teachers need to consider permitting a positive teacher–student relationship for effective teaching and learning to occur. If the teachers are aware of the challenges that their students are likely to face, and the strengths and skills that they possess, it is likely that such teachers will be more confident in addressing their needs inclusively. The following section discusses this matter further.

6.2.6 Liaison with parents and other professionals

Participants in this study also commented about liaison with parents and other professionals For example, liaison with and support from *school guidance officers* (Chantal, PS), and training with *occupational and speech therapists* (Stella, PS), *clinical psychologists* (Cynthia, RG) and *physiotherapists* (Natalie, RG), could be valuable resources for teachers in providing information and guidance about teaching students with ASD, and hence for improving their self-efficacy and preparedness in teaching students with ASD. Teachers who teach with no support and collaboration with parents and other professional may feel less confident in their ability, leading to stressful teaching careers. One of the key elements of Individual Education Plans (IEPs) for students with ASD is having a meeting with parents who can deliver important information about their child.

Parents can share critical information (such as their child's interests, likes, dislikes and ideal learning styles) with the teachers, which can be incorporated in their IEP goals (Australian Government, 2019). Thus, if teachers lack requisite liaison skills and knowledge about ASD, they feel less confident in approaching parents and students to provide successful inclusion for these students. From the data, it was found that not all PSTs had the opportunity to liaise with parents and other professionals. For example, Chantal (PS) commented,

I just didn't have the opportunity number one to meet their families to liaise with experts. I think, as far as my knowledge during the practical and during my university theory education, well, I think I was well prepared for it, but I just didn't have the time to learn how to liaise with the various experts and family members.

Chantal (PS) further commented,

I think my practical really let me down. I knew the theory of it, but I never actually got to do it myself. I never got to speak to parents. I never got to – you know, sort of figure out what works best for those students.

Mila (PS) said,

Look, if you're talking about my teaching journey from my degree – that's only a small window of the learning that I've done over the years to get myself to a place where I feel confident to talk to parents about their child with ASD.

Summer (RG) stated that during teacher education it would be helpful if PSTs are taught how to "understand or how to deal with the parents too". Accordingly, there must be an induction program for all PSTs teachers who work with individuals with special needs, including those with ASD. During the induction program, the parents of these students should be invited to discuss any concerns related to supporting the academic, behavioural and social needs of their children. Even though PSTs' have mentors for support and guidance through their teaching practicals, it is highly significant to be able to build partnerships with parents during their practicum. Liaison with parents and other professionals who work with these students should be one of the requirements for the teaching practicals for PSTs and must be covered in the course content at the university level.

A study conducted by Hart (2009) found that parents can provide valuable and specialised information about their children to classroom teachers, which may help them to structure the environment for better engagement of these students in their mainstream classrooms. Further evidence has shown that parental involvement significantly influences the progression of the child (Levy, Kim, & Olive, 2006), and may also have an impact on teachers' self-efficacy in accommodating these students in the classroom. On the other hand, disregarding parental liaison and insight sabotages the teachers' relationships with the parents of students with ASD (Sheehey & Sheehey, 2007). In this sense, "novice educators should be taught strategies to solicit and integrate parental insight into educational programming" (Shelton, 2013, p. 205).

Moreover, Kahlia (RG) had worked with parents and other experts who worked with children with ASD, and she stated,

> I feel it's important to have that open communication, to better understand the child, particularly from the parent – you know, you can learn so much from them as well. I think it's important to keep that communication regular and always happy to learn from other experts, to get tips. I know there was an occupational therapist (OT) that came to the room the first year, and they had some wonderful advice and things to try with that child. I've also talked a lot with the OTs that we have coming to our school just to gain their knowledge and understanding about how to support these children.

Nina (RG) was confident in her ability to teach students with ASD, and she commented that she regularly liaised with the mother of one student who had been diagnosed with ASD in her class. Nina said,

> One of the high-functioning boys, his mum is actually a music teacher at our school, so I see her quite regularly, or send her a message about something [that] has happened in the classroom, or to see if there's anything in the classroom I can do to support him.

For another student in her class, Nina said,

The other boy, his mum, I feel confident in contacting her if there's anything

around working together. Like at the beginning of each term I let her know

what we're looking at, what our focus is for the term, especially around

maths, so she can support him at home, and I send home extra worksheets for

him to do.

Therefore it can be interpreted that partnering with parents and other experts such as occupational therapists, guidance officers, speech therapists and clinical psychologists can help teachers to develop effective interventions to support students with ASD and to enhance their successful inclusion. Effective teacher liaison with parents and other experts is essential for teachers' self-efficacy whereby they all work together to solve issues concerning the child with ASD. Additionally, from PSTs' perspectives, it would be helpful if they were provided with some training about how to liaise with parents or other experts, since they all played a major role in establishing friendly and productive working environments for teachers to accommodate students with ASD within their mainstream classrooms. It is beneficial that the teachers (especially pre-service or other relatively new staff members) are aware of this expertise, and of how to liaise effectively with them to help the students.

Finally, such an interdisciplinary team approach is useful to evaluate the needs of these students, and consequently timely intervention programs can be designed to address the academic, behavioural and social needs of such students. These may further influence teacher self-efficacy in teaching students with ASD in mainstream classrooms, whereby teachers can liaise with parents and other experts, such as those mentioned above, to help them to address any gaps that teachers might have in addressing the academic, behavioural and social needs of these students. At the same time, examples of quotations where the participants said that they were not confident are discussed as follows:

From the interview with Mila (PS), it appeared that it is generally difficult to support students socially, possibly owing to the limited amount of time spent with these types of students in a teaching practicum. If so, this would indicate the need for PS? teachers to be more exposed to students with ASD within mainstream classrooms. She further stated that external support, such as from educational psychologists, was vital to influence a teacher's confidence in addressing the social needs of students with ASD. Without that external support, Mila felt less comfortable about accommodating these students within inclusive classroom settings.

Joy (RG) discussed one of her students with extreme social issues,

The challenge for us and for him, when he was in Year 4, was probably the social skills side of things. It was an area that we could do parts of it as part of our program, but he really needed intense interaction, so there was a withdrawal method that we used to support the social skilling for him.

It is evident that some students with ASD have intense impairments in their social skills. Although the inclusion of these students within general classrooms is beneficial in improving their gross social skills, there could be some instances when these students need to be withdrawn from a classroom for a more focused intervention within this specific area of need. Helping these students in addressing their social needs can still be a challenge and relatively daunting to the teachers, who may feel unprepared, which may in fact, negatively influence their self-efficacy beliefs.

Joy (RG) further commented,

I reckon that's probably something that I would need more support in the classroom, and I guess that's where you probably look at your [teacher] aides or your specific teachers to help with even just any kind of social skilling or functional behavioural issues, or whatever it may be.

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A careful examination of this extract showed that Joy suggested a need for additional support within the classroom when she had a student who may require extreme social and behavioural interventions to provide an inclusive educational experience successfully. Such support can be tailored in the form of a teacher aide within a classroom who can assist the mainstream teacher in the accommodation of students with ASD. Indeed, the study of Moran and Abbott (2002) claimed that "The most critical strategy for creating successful learning experiences for all children, regardless of disability, is teamwork", and that the "teaching assistants should be part of a working team" (p. 16). From this study, it was found that the PSTs and RG teachers both understood the value of liaising with parents and other professional experts who worked with students with ASD. However, few of them mentioned that they needed more experiences.

6.3 Participants' self-efficacy as teachers in general classroom teaching

While exploring the participant's self-efficacy and preparedness in teaching students with ASD, inductive analysis of the data found that, since general classrooms are filled with diverse learners, teachers feel unprepared and less qualified, and have limited experiences, in teaching students with different learning needs and requirements. Considering that one of the first concerns of teacher education programs is to develop teachers to become efficacious in their abilities to educate diverse learners (Palmer, 2006; Siwatu, 2007; Siwatu & Starker, 2010), it was critical to explore this phenomenon as well. Moreover, for inclusive classroom teachers it is important to value all learners in the classrooms to promote access, equity and successful inclusion.

Some participants in this study were surprised to see the level of the diversity in their classrooms, and they were not sure how to deal with these students. For example, Maria (PS) said, "I was just quite surprised at the varying degrees of the diversity. The school I taught was extremely diverse, with kids with other disabilities who are included in the mainstream, but how do you deal with them." From this account, it was evident that teachers not only have limited skills in teaching students with ASD, but also lack skills in teaching students with specific learning needs and requirements.

Additionally, Stella (PS) had a similar concern. She commented,

> On my practical course I had the student with autism, I had a
> student with intellectual impairment, I had another student with
> ADHD and I had three more students who were undiagnosed and
> needed heavy support as well. It was really hard to know how to
> juggle all of that. Like, I knew how to run the basic classroom, but
> that was, I guess, where I felt most under pressure and like I wasn't
> sure what to do, how to meet the needs of those kids and, yeah, do
> that proper inclusion where they were getting the same
> opportunities that the other kids were getting.

Every teacher wants to provide the best and equal education to all her or his students; however, many of them feel less confident in their ability to address the diverse needs of students in their classrooms. On the same note, Bella (PS) mentioned that in her class there were four students with ASD who all had different needs. She stated,

> I had four students with a diagnosis, and they're all different students, as well
> as the student in your class with a hearing problem, and the student in your
> class with [an] eyesight problem, the student in your class with anxiety
> issues, and I don't – and I am a confident teacher, but I'm not 100 per cent
> confident that I can cater properly for those students.

It is evident that, even though Bella (PS) was a confident teacher and was committed to teaching, she did not feel confident to teach students with special needs and those with ASD simultaneously with the rest of the typically developing students in the classroom. From this extract, it is inferred that teachers who are not adequately trained have low self-efficacy beliefs in their abilities to teach students in diverse classrooms. If teachers lack knowledge and skills in successfully accommodating students in their classrooms, they are denying the rights of all children by not providing successful inclusion.

Additionally, Bella (PS) said,

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"I am a confident teacher – [teaching] children is all that I know – but in terms of catering to those diverse needs of students with autism - and any additional learning needs – it's just not something that we're prepared for at the university."

Importantly, it is not always about teacher preparation; it is also about knowing the students well. Knowledge and skills about ASD are important to include students in mainstream classroom successfully; however, the students' backgrounds are equally important. Every year it is likely that classroom teachers will have students with ASD in their classrooms; therefore, the more that teachers know about ASD and the needs of their students, the better that it will be for everyone. Kahlia (RG) said,

Our classrooms today are so diverse, it's impossible to have a one size fits all approach in your classroom today. It always must be inclusive, and so that is all about knowing your students, and teaching – having like a backward design approach, and differentiating work for different groups of students in your classroom.

Given the diversity in the classrooms, teachers must have the flexibility of differentiating or adjusting the curriculum to suit the needs of their students and to provide the right level of support needed. Teachers who have studied special education courses may have the required knowledge about differentiation; however, teachers with no special education background may lack these skills or knowledge.

6.4 Chapter summary

This chapter has explored the PSTs' and the RGs'? self-efficacy and preparedness in teaching students with ASD conditions in mainstream classrooms, in response to the study's second research question. In accordance with the data analysed, it was found that the teachers' confidence is likely to increase with the experiences that they gain over the passage of time, and with the support that they receive to teach students with ASD conditions through parents, teacher aides, school

administrations and other professionals who deal with individuals with ASD. Previous involvement or contact with individuals with ASD, such as being a parent of a child with ASD, may also influence teacher self-efficacy and preparedness in teaching these students.

Liaison with parents was also important, and hence teachers need to be trained how to liaise with them and with other professional experts, since parents and other support staff members can be involved with problem-solving concerning the student with ASD. For PSTs, guidance and support from their mentor teachers are critical to ensure that they feel confident in their ability to teach these students. Years of experience in teaching students with ASD, and more fieldwork experiences, also enhance their capacity in teaching students with ASD. All these aspects can be linked with a teacher's preparedness and self-efficacy beliefs in addressing the academic, behavioural and social needs of such students.

Some participants also felt that they were not trained in this area and, that with more experience, they were likely to feel that their confidence in teaching these students could increase over time with more real-life teaching experience. Additionally, the results showed that the teachers who were on their practicals and those graduate teachers who were doing casual teaching had a limited knowledge about the students with ASD, and so it could be rather challenging for them to make appropriate judgements about their students' abilities. While exploring the data, it was also discovered that a few teachers felt challenged by the diversity of learners in today's classrooms and felt the need for more training in this area as well. Finally, it can be interpreted that teachers' self-efficacy and preparedness in teaching students with ASD can be influenced not only by limitations of teacher education, but also by the factors presented above in this chapter. The final data analysis chapter explores teacher education experiences in teaching students with ASD in inclusive classrooms.

Chapter 7 Teacher education experiences and teacher preparation

7.1 Chapter overview

The previous two chapters discussed the participants' views of the inclusion of students with ASD conditions within their classrooms and explored the teachers' self-efficacy beliefs and preparedness in accommodating these types of students in their classrooms. This chapter continues this discussion by presenting the participants' views about their teacher education programs and their experiences in preparing for teaching students with ASD conditions within inclusive classrooms. To explore this phenomenon, the following research question has been mobilised:

(3). What are the participating PSs' and the RGs' teacher education experiences, and what are the ways of improving their skills and knowledge in teaching students with ASD within mainstream classrooms?

In the context of the present study, this research question was deemed as important to explore, since the participants' educational experiences, and more precisely their preparations to teach students with ASD conditions may influence their confidence levels and attitudes within inclusive classrooms. In addition, there remains a research gap linking the teacher education programs with their roles in the preparation of teaching students diagnosed with ASD (Donnie, 2018; Gordon, 2017; Mazin, 2011). Therefore it is important to contribute to addressing this gap.

Inadequate education in teaching students with ASD may lead to lower teacher self-efficacy. Having lower self-efficacy may negatively affect a teacher's view of her or his teaching culture (Tschannen-Moran & Hoy, 2007), eventually encourage teachers to opt out of their teaching careers. Hoy and Spero (2005) indicated that adequate training is likely to increase one's sense of one's capabilities and teaching efficacies. Other researchers have shown that inadequate teacher preparation can impact on teachers' self-efficacy in teaching students with diverse learners, including those with ASD conditions (Lastrapes & Negishi, 2012; Leblanc et al., 2009; Swackhamer et al., 2009). It is therefore important to make higher quality educational opportunities available to all individuals with ASD conditions,

and this can be accomplished only if the professionals who work with these individuals are well-prepared to teach them. Therefore it can be said that teacher education and self-efficacy are two important aspects that can relate to teachers' abilities to educate successfully students with ASD conditions within inclusive classrooms.

By the very nature of this qualitative research study, it was envisaged that the participants would articulate their teacher education experiences, and the role of those experiences in preparing them to teach students with ASD conditions. Seeking such perspectives and extracting this knowledge from participants is very important to assist higher education personnel in deciding suitable professional development for teachers, and in further developing curricula for teacher education programs that relate to teaching students with ASD conditions. Currently there is little research evidence (Scheuermann, Webber, Boutot, & Goodwin, 2003) to provide an analysis of the effectiveness of the teacher preparation programs in teaching students with ASD.

The themes that emerged from the thematic analysis of the study's the qualitative data are presented in the following sections of this chapter. The discussion of each of these themes is supported with relevant evidence from the participants' interviews. Using both inductive and deductive analysis of these qualitative data, themes and subthemes emerged that are outlined in Table 7.1.). This chapter discusses what the participants felt would potentially help them to be appropriately trained to teach students with ASD conditions in their classrooms.

Table 7. 1

Themes and Sub-themes Related to Research Question 3.

Theme: (Section 7.2)

Special education coursework influences teachers' self-efficacy

Theme: (Section 7.3)

More training opportunities for PS and in-service teachers

Sub-theme:

Professional development initiatives

Types of education and training at PS and in-service levels

Components of ASD-specific strategies

7.2 Special education coursework influences teachers' self-efficacy

The within-case and cross-case thematic analysis of the qualitative data showed that three of the PSTs cohort and five of the RGs cohort felt a need to have a core and/or compulsory course taught specifically about ASD conditions. However, the majority of the participants who commented on this aspect were the RGs. Altogether, a total of seven out of the 16 participants believed that they needed to learn more helpful strategies in teaching students with ASD conditions, so that they could successfully accommodate them in their mainstream classrooms. Currently, these participants felt that their teacher education courses lacked these important strategies, which tended to increase the challenges that they faced in teaching students with ASD conditions. From the interview data, 7 out of the 8 RGs mentioned that they lacked these teaching strategies.

There were three pre-service participants who appeared to be quite knowledgeable and confident in dealing with individuals with ASD conditions, but this was because they had personal experiences as parents of such students. However, they felt that they lacked specialised teaching strategies, given that all individuals with ASD conditions have unique learning abilities, and that ASD specific teaching strategies were not something that they had enacted at home with their children. The following section discusses these findings in greater detail.

Participants who completed special education courses felt that they had more knowledge and skills in relation to the inclusion of students with ASD. Bandura's (2001) environmental factors are operationalised through coursework in special education specifically for students with ASD. The data from this study showed that participants' self-efficacy was higher compared with those participants who did minimum to no training in teaching students with ASD. An equal number of participants from both sets of cases mentioned that completing a special education course helped to increase their knowledge and confidence level in teaching students

with ASD conditions. Three of the eight (PS) participants studied special education courses to learn better ways to teach students with ASD, and these participants felt that they had made a good decision in taking these courses, since they provided them with a greater knowledge base about ASD.

Two of the five participants who had not taken any special education course felt that it would have been useful if they had taken such courses, and they also felt regretful that they had not done so. Moreover, six out of the eight RGs had studied special education courses, and they all felt that those courses had been significantly useful and assisted them to acquire relevant skills and knowledge in teaching students with ASD conditions.

Anna (PS), who completed an elective course about ASD, said,

It gave us quite a lot of information about ASD. I think that's probably why I'm able to look at and see the different traits more than what probably a normal teacher could. I'd also had that experience, so it was an area that I knew I could quite easily get, fall into.

Anna (PS) further stated that, "without that training with the ASD side of it that I've had, I don't think I would be as confident as what I am." Anna did have some personal experience beforehand, since she had a son diagnosed with ASD, but she felt that completing the special education course about ASD gave her more scope, which made her feel confident and prepared. However, even though Anna mentioned that she felt confident in working with these students, she confirmed that she lacked awareness about the EBPs in teaching students with ASD.

Just like Anna, Bella (PS) also undertook an ASD-related course as an elective because of her own initiative and interest, but she was concerned about other general classroom teachers who opted not to complete the special education courses as an elective. She said, "When we're talking about children with autism, and even children with any additional learning needs, we're not prepared, I think you would find - unless you're a special education major student." According to Bella, teachers

who were not special education teachers would have less awareness about the learning needs of students with special needs.

It can be said that teachers who are trained in special education courses are more knowledgeable about special needs students including ASD, than those who are not special education trained. This notion is consistent with a study conducted by Mavropoulou and Padeliadu (2000) about general and special education teachers' knowledge of autism. They found that, while general classroom teachers demonstrated a brief awareness of ASD, there was a significant difference in the depth of knowledge and skills between the two groups. Furthermore, Park et al.'s (2010) study also found that PSTs acknowledged that teachers who were trained in special education may be able to work with students with ASD.

Therefore completing a course relevant to teaching students with ASD conditions is of the utmost importance. Previous research showed that PS educators' efficacy beliefs have been improved through university coursework, whereby student teachers gain opportunities to prepare lesson plans and to teach the classes (Cantrell et al., 2003; Watters & Ginns, 2000). As Stella (PS) revealed, "I am early childhood specialisation and I didn't really learn much about ASD till I chose to do a special education elective." Stella completed a special education course that was all about ASD, and she reported that it was probably "the only time that I learned specific things about autism at the university." She further noted that she completed four different special education courses for her electives, which helped her a lot. Therefore, from all these accounts discussed above, it can be assumed that PS participants who completed special education courses or ASD-related course as electives felt that they had acquired some skills and knowledge in teaching students with ASD. However, it was a concern to those general classroom teachers who never chose to select elective courses about ASD and who were never exposed to teach students with ASD.

Kaylia (PS) felt regretful that she had not taken any special education courses during her teacher education program:

I haven't done any special education electives. It's a bit of a shame,

because I do feel like I would be underprepared having a student

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with ASD in my classroom. I would have to do my own research

and get to know the family and the child before I could make my

own decisions on teaching.

From this account, it can be said that Kaylia (PS) felt underprepared to teach students with ASD, and that she blamed herself for not taking that special education course as an elective. She relied on her own initiative in learning about ASD by conducting research and liaising with families to make decisions about her students' learning. She commented that "I don't think our degree" had given enough knowledge and confidence in teaching students with ASD, "unless you do a special education degree, or you choose special education electives." At the university they had learned "just the basics" about ASD.

Maria (PS) also felt that it would have been helpful if she had taken a special education course that taught about ASD to make her feel better prepared to teach in an inclusive classroom. By contrast, Cynthia (RG) felt very lucky to have chosen the elective course about ASD. She claimed:

So, when I knew that I was having this high-functioning student, I

actually came back and read through all of my notes from that

elective subject, as in my mind to know what I was dealing with,

just to refresh my memory about Autism Spectrum Disorder.

Hope (RG) said that, after completing the "specialist autism course at the university, I knew a lot of strategies to deal with those kinds of kids." Similarly, Kahlia (RG), who had also taken the autism course as an elective, said that she felt grateful that she had completed that course, which had had a significant impact on her knowledge and skills in teaching students with ASD. She further reported, "If I hadn't taken that course, I think it would have been quite overwhelming, and I wouldn't have known just the basics of what to do." Finally, Summer (RG) also completed the autism course as an elective because, as she said,

I knew it would be something I needed to deal with. If I hadn't

done that, it would've been even worse because at least I learned

about giving them small pieces of information and giving them

time to digest things and calm them down.

From the evidence gained from these qualitative interview data, it was found that the participants who had studied special education courses and who had some element of personal contact with individuals with ASD felt somewhat more knowledgeable about ASD than those participants who had never had any exposure to ASD courses and/or any contact with individuals with ASD. Hence, these teachers who completed a special education course reported having a higher self-efficacy belief in teaching students with ASD than those who did not. This notion agrees with a study conducted by Gordon (2017) whereby it was found that teachers who studied additional special education courses during their PS teacher education reported higher self-efficacy than those who completed only one or two courses.

On the other hand, participants who completed only general teacher education coursework felt that their coursework was insufficient to prepare them to teach students with ASD. This notion was consistent with a study conducted by Shelton (2013) who also found that teachers who completed only general education coursework had limited skills and knowledge in teaching students with ASD. Given that some of the participants in this study completed special education courses only as electives, it is a matter of concern to all those general classroom teachers who opt not to choose these special education courses as electives. Participants who completed some sort of an elective course about ASD felt lucky that they had achieved some level of awareness about this condition. Additionally, Kennedy (PS), who had not taken any special education course about ASD, firmly believed that there was nothing specifically taught about autism in her other courses at the university; even though, other disabilities were discussed.

On the same note, Kennedy (PS) also felt that she did learn about "general disability[ies]" during her education but not specifically about autism. From Kennedy 'statement it can be interpreted that, because she had not taken a special education course on autism, she felt that she had not learned anything specifically about autism. It is likely that other courses that she may have taken during her

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teacher education program did not specifically discuss autism, but instead discussed educating learners with special needs in general.

Kennedy (PS) further said, "When Bella [PS] mentioned you were doing this study, I'm like, 'I thought about it in my head of what I've learned, and I've learned nothing." Summer (RG) said, "I feel it was woefully inadequate, to be completely honest with you. I can honestly say that university didn't really prepare me for teaching [laughs]. I would say it was not adequate." Even though Summer had completed a course about ASD as an elective, she felt that it was inadequate. She had learned a limited amount about autism in her coursework. From Kennedy's and Bella's accounts it can be said that they had low self-efficacy in teaching students with ASD.

The above perception of inadequate teacher education in teaching students with ASD was consistent with a study conducted of the Australian Autism Educational Needs Analysis by a team of researchers. It was found from this study that teacher education and training were one of the possible barriers to educating students with ASD (Saggers et al., 2016). Other researchers demonstrated that inadequate teacher preparation impacted on teacher self-efficacy (Lastrapes & Negishi, 2012; Leblanc et al., 2009; Swackhamer et al., 2009). Therefore teacher self-efficacy in teaching students with ASD may be improved through teacher education and coursework focusing on teaching students with ASD.

Busby et al. (2012) has also theorised that teacher self-efficacy is likely to increase through training and coursework focused on teaching these students. Furthermore, teachers' self-efficacy cannot be determined only by the coursework that they engage in, but is influenced also by their classroom teaching, support from the school, collaboration with colleagues, and liaison with parents and other professionals who work with students with ASD. Additionally, ongoing training is essential to allow teachers to gain more confidence in their teaching.

For the PS teachers', their training may include coursework related specifically to teaching students with ASD, through classroom experiences during their practicum and professional development offered through universities or other

professional bodies. RG must also undertake ongoing professional development related to teaching students with ASD through educational or other external bodies.

7.3 More training opportunities for PS and in-service teachers

Although the participants in this study felt that completing special education courses as electives was helpful, the content covered did not substantially prepare them fully to teach students with ASD. It was interpreted that having a compulsory course rather than an elective about ASD must be considered, given the increased number of students with ASD placed in inclusive classrooms. Anna (PS), who had completed a special education course about ASD, said, "I think that there needs to be more given to pre-service educators in our actual core subjects looking at ASD." She further commented that teachers lacked the specialised strategies to work with students with ASD.

Anna (PS) stated "that it should be part of the enrolment plan" with a "complete course" about autism before all teachers begin teaching. Anna emphasised strongly that "We need to learn in depth, not just surface learning." Stella (PS) commented that, "given the high percentage" of students with ASD in today's classrooms, "more time needs to be spent in the general core courses about how to recognise those needs and how to support them." Kahlia, Hope, Cynthia and Natalie, who were all RGs, believed that there needed to be a compulsory course about autism for all undergraduate students. Natalie (RG) emphasised strongly that it would "have been really, really helpful to have a subject that we had to do that was dedicated to teaching these types of students because they're in every class, [to] varying degrees."

As was stated by Lillian (RG), if an undergraduate student opted not to select the elective course about ASD, they found it extremely difficult to accommodate the increasing number of these students in inclusive classrooms. This was because they lacked the specialised skills and strategies to support these students as they displayed unique characteristics, unlike more typically developing students. It is important that all teachers, regardless of whether they are general classroom teachers or special education teachers, should complete a compulsory course about teaching students with ASD.

These findings are in agreement with a study conducted by Apers (2016) of teachers' perceptions about their preparedness to teach and include children with ASD conditions, in which teachers felt that completing a compulsory course about ASD may enhance their knowledge and skills. According to Gordon (2017) relevant training, experiences and preparedness in teaching students with ASD influence teachers' self-efficacy, which may impact on those same teachers' willingness to accommodate these students successfully in their classrooms. Other researchers in this area support the need for appropriate training as the main priority for those teachers who encounter students with ASD in their classrooms (Barnhill, Polloway, & Sumutka, 2011; Leblanc et al., 2009; Morrier et al., 2011).

Kennedy (PS) was well-informed about ASD owing to her personal experiences with her son, but she felt a need for more specific training about ASD for those novice teachers who have not had any previous contact with individuals with ASD. Kennedy said,

Not specifically for me, but for other students I think that it would

have been important for them to have done some sort of element

with autism. Because I'm just finishing my third year now, and I

haven't seen anything – or we have not even discussed anywhere

anything about autism.

A lack of specialised training about teaching students with ASD may have a negative outcome in terms of student learning, making it difficult for the teachers to include them successfully in their classrooms. Undoubtedly, teachers with inadequate training are likely to be less successful in their roles and responsibilities (Berry, 2010). Hence, from this evidence it can be interpreted that having a core course specifically for teaching students with ASD must be a priority.

Relatedly, other researchers such as Busby et al. (2012) recommended that an additional course be included for PSTs that focused specifically on the inclusion of students with ASD. Moreover, the Australian Association of Special Education (2018) supported the need for a stand-alone course about teaching students with

disabilities/special needs within all PS teacher education programs across all Australian universities. In their submission to the Australian Senate inquiry about supporting students with special needs in schools they stated that the "course content must include the legal obligations of schools and teachers, information on assessment, programming, instruction, making adjustments and collaboration with specialised teachers and teacher assistants" (p. 6). Furthermore, their submission also mentioned that "all units in content areas should include a range of teaching methodologies, including teacher-directed explicit instruction as well as student-centred approaches" (p. 6). These content-based requirements during teacher education are particularly important to prepare teachers appropriately for teaching students with special needs, including those with ASD.

At present, teachers with no personal experiences with individuals with ASD feel less prepared to teach these students. Those teachers with some personal experiences feel nevertheless that they lack the specialised teaching strategies, given that all individuals with ASD have unique learning abilities. Liacono and Allen (2008) also found that specialised training in ASD is generally lacking or is not sufficient in teachers' professional development, which makes it difficult for teachers to successfully adapt their teaching styles successfully to the highly diverse learning styles of their students.

Accordingly, the findings of this study suggest a need for in-depth training/education and professional development for PSTs and RGs to allow them to be fully prepared to teach students with ASD in their classrooms. It is important to acknowledge that not everything about teaching a wide range of students with unique needs can be learned through teacher training programs due to limited time frames. Therefore these teachers must build their capacity in teaching through a wide range of professional development (PD) opportunities.

Furthermore, implementing courses in ASD has been a challenging task owing to several reasons (Hart & More, 2013). These includes limited time for instruction, the increasingly prevalent rates of ASD, limited university budgets, instructional programs that have variable student attendance and competition within the Faculty owing to the workloads of academics (Coates et al., 2017). Therefore it is

recommended that professional developments may assist to enhance teachers' knowledge and skills in teaching students with ASD.

7.3.1 Professional development initiatives

Notably, becoming involved in professional development initiatives offers sources of self-efficacy, such as vicarious experience and social persuasion, that have been shown to improve teacher self-efficacy among preservice teachers (Leblanc et al., 2009). Some of these professional development opportunities, which were identified through data analysis and literature reviews, are listed below.

- ✓ As an example, Anna (PS) completed a professional development session about autism through Education Queensland's online *Learning Place*, which offers a range of professional development opportunities to all Education Queensland teachers.
- ✓ All schools should offer *induction programs* for their new teachers. For example, Chantal (PS) mentioned that her school's *guidance counsellor* offered professional development about supporting students with disabilities to all PSTs. Notably, *teacher induction programs* are one of the source of vicarious experience for teachers (Billingsley et al., 2004). *Teacher induction programs* are critical for inexperienced teachers in forming their ideologies of teaching and pedagogical perspectives (Taskin-Can, 2011). According to Billingsley et al. (2004), research about the impact of *induction programs* found that providing induction to teachers influences their self-efficacy. Therefore teacher induction programs are important to provide responsive support to novice teachers.
- ✓ *AEIOU (Autism Early Intervention Outcomes Unit)* foundation for children with autism was mentioned by Stella (PS), who learned a lot about autism through this organisation.
- ✓ *Autism Queensland* is another body that provides professional development to teachers in schools. According to Hope (RG), "We're having more luck now, but that's because we had Autism Queensland come out and visit us, and they've given us ideas and suggestions" about teaching students with ASD.
- ✓ Professional development sessions presented by people like *Sue Larkey* and *Dr Louise Porter* were mentioned by Mila (PS). They are specialised in all

aspects of ASD. Mila (PS) said that she completed some professional development through *Sue Larkey* and *Dr Louise Porter* and referred to their resources to improve her skills and knowledge related to ASD.

✓ *Volunteer work*: Bella (PS) mentioned that she completed some volunteer work with individuals with ASD to prepare herself for classroom teaching.

✓ *Other professionals in schools* could also be good sources of resources for teachers in building their capacity to teach students with ASD. Examples included school *guidance officers* (Chantal, PS), training through *occupational and speech therapists* (Stella, PS), *clinical psychologists* (Cynthia, RG) and *physiotherapists* (Natalie, RG).

✓ *Web-based research*: A few participants responded that they conducted their own research to develop their skills and strategies in teaching students with ASD. For instance: Kayla (PS) and Kahlia (RG) said that they complete their own research. Natalie (RG) referred to "lots and lots of research on different activities on *Pinterest*, to get their attention or their interest in a particular topic."

In addition to all the professional development discussed above, teachers may consider joining social networks. Online learning communities networking may assist all teacher to collaborate with other teachers and to share their experiences and strategies in teaching students with ASD. For instance, social media applications such as Twitter (Carpenter & Krutka, 2015) or Facebook may be media for interpersonal communications between teachers or other professionals who work with students with ASD.

According to Lee and Shaari (2012), teachers' self-perceptions of being incompetent and inadequate are heightened when they teach in isolation with no supportive networks of other people. A study by Moolenaar (2012) found that teachers' network density leads to greater efficacy in their ability to teach. Therefore the use of such social networking sites may also influence teachers' self-efficacy in teaching students with ASD as they provide teachers with access to one another's experiences and knowledge in such teaching.

7.3.2 Types of education and training at PS and in-service levels

Hansen's (2006) findings revealed that "teacher efficacy is associated with academic qualifications, practical experience, and professional (pre-service and in-service) development" (p. 53). Additionally, to train educators in teaching students with ASD, training protocols must consist of written or verbal descriptions, as demonstrations through videos and role plays can be effective ways of teaching at the university level (Rispoli, Neely, Lang, & Ganz, 2011). It is assumed that whatever is learned at the university is just foundational knowledge about ASD, with nothing much specifically about the practical strategies of teaching these students. Stella (PS) commented that she was hoping to learn more "on the practical strategies that you could implement in the classroom." Therefore it can be said that practical exposure and experiences in teaching students with ASD constitute a critical factor in influencing teachers' self-efficacy and preparedness in teaching such students.

Other means of training these teachers could be by running workshops either by external delivery or on-campus for PSTs and in schools for in-service teachers. The workshop may include video clips (with real-life examples showing how to work with individuals with ASD), reviewing external bodies' websites (for example, Autism Queensland or Autism Awareness Australia), reviewing online open resources, peer collaboration (where participants discuss their experiences, classroom pedagogies and ways of overcoming challenges students) or some scenario-based activities relevant to teaching students with ASD.

Summer (RG) stated that at "university we really should be given a lot more real-world situations" – for example, teaching students how to ask for help and to help "them [to] navigate conflicts with other students, which is a daily thing". Lillian (RG) commented that it is important to expose PSTs to different scenarios that they could encounter while teaching students with ASD. She asserted that "it is important that pre-service teachers get to actually see students with ASD, or even if a clip showing different behaviours with strategies that work for that behaviour." Other researchers in this area found that teachers' self-efficacy beliefs are improved through university courses that offer student teachers practical teaching applications with hand-on activities, experiences in designing lesson plans, and/or opportunities to teach some lessons (Cantrell et al., 2003; Watters & Ginns, 2000).

Combining theory about ASD-specific teaching and practical-based training with more experiences and exposure to classrooms is conducive to increasing teacher self-efficacy and preparedness in teaching students with ASD. Including these in teacher education programs or as professional development for all teachers may directly influence their self-efficacy. Apart from these, it is important to consider what exactly needs to be taught in teacher education courses.

Based on Shyman's (2012) blueprint for PS teacher education for teaching students with ASD, the nine components of teacher education programs that should be taught to PSTs s include: characteristics of Individuals with ASD; understanding of current research and evidence-based practices in ASD; multidisciplinary approaches to methodologies in ASD; behaviourally-based approaches; emotional-based approaches; communication-based approaches; technology-based approaches; sensory-based approaches and medically-based Approaches. These nine components are important to provide to PSTs to enhance their knowledge base and preparedness in teaching students with ASD.

Other related literature has recommended that offering effective professional development and personnel preparation in educating students with ASD includes: online courses with discussion platforms/fora, traditional face-to-face courses, field-based excursions or tours to observe students with ASD, role plays (videos or simulation activities) and real-life experiences of EBPs during practical experiences (Edmonds & Spradlin, 2010; McLeskey, 2011; Morrier et al., 2011). It follows that professional development for all educators and support staff members must cover three main areas: "general and thorough understanding of the instructional implications of high functioning ASD (HFASD); assessment strategies for analysing the specific support needs of individual students with HFASDs[;] and techniques known to be effective for improving the behavioural, social, and academic outcomes of students with HFASDs" (Sansosti & Sansosti, 2012, p. 930). Therefore these are some of the useful areas of professional development that teachers need to consider to build further their efficacy and preparedness in teaching students with ASD.

Furthermore, to support appropriately students with ASD conditions academically within inclusive classrooms, the participants in the interviews also referred to the issues related to the "differentiation of the curriculum." According to

the Department of Education Tasmania (2016), differentiation is "about making adjustments that personalise learning to reflect the needs, strengths and interests of students" (p. 5). For example, Bella (PS) mentioned,

> I feel like there's a lack of ongoing professional development in the area of universal design for learning for autism and how to cater for differentiation with those students. So I'm scared to start teaching, because of the level of differentiation that is needed within a classroom these days.

The above two examples highlighted clearly that the PSTs are not confident in differentiating the curriculum to accommodate the needs of their students with ASD conditions. Bella (PS) said that she was scared to begin her teaching journey because of the level of differentiation that is required for successfully teaching students with ASD. This is possibly due to her limited knowledge and skills in this specific area. It is also important that all PSTs, regardless of whether they are special education trained or not, must possess in-depth knowledge about the curriculum adjustments necessary for the successful inclusion of students with learning disabilities (Winn & Blanton, 2005).

Furthermore, it is stated in the existing literature that there is a lack of ongoing professional development in the Universal Design for Learning (UDL) method in relation to autism (Holdheide & Reschly, 2008). It is therefore crucial that all teacher education programs are able to reinforce the concept of UDL and to facilitate the differentiation of the relevant curriculum to equip all teachers with the necessary skills and knowledge. Such skills and knowledge can greatly aid teachers' confidence in accommodating all students successfully within mainstream classrooms (Holdheide & Reschly, 2008). The following subsection discusses the evidence from the participants' interviews about their voices related to the strategies that they hoped to learn to ensure their capacity to meet the needs of these students.

7.3.3 Components of ASD-specific strategies

Many participants in this study stated the need for more ASD-specific strategies in their teacher education programs, so that they could successfully teach

these students. Many of them felt that there was not enough training on different strategies for teaching students with ASD to promote success. This perception was consistent with the research by Callaway (2014), who also mentioned that university PS programs provide only foundational or functional knowledge and skills about teaching students with ASD.

It is important that teachers of students with ASD engage in a range of different strategies to satisfy the unique and challenging needs of such students (Iovannone, Dunlap, Huber, & Kincaid, 2003; Whitby et al., 2009). The ASD-specific strategies must address not only the academic needs of these students, but also their social and behavioural needs, since the findings from this study show that the participants lacked these skills. The following analysis presents some of the extracts from the interviews about ASD-specific strategies.

Stella (PS) had personal experiences with individuals with ASD, given that her son had been diagnosed with an ASD condition, but she felt the need to learn further, mainly about different strategies she could use in her classroom. She reiterated that "I was hoping there would be more strategies taught. Whereas we didn't do any lectures about different strategies to use. We did an assignment where we went off and found our own and presented how we would use them." Stella mentioned that she had completed an elective course about ASD, which had been useful, but she felt that she needed more in-depth knowledge about ASD-specific teaching strategies. Stella had hoped to learn "what strategies can you use to get an autism child to engage in an activity."

Additionally, Hope (RG) stated, "I have been given a very highly autistic child with whom the normal strategies just aren't working for him. He is quite difficult to manage. He's very high functioning." Hope revealed that the PS course that she had completed at the university focused mainly on the students who are low on the ASD spectrum, whilst for those students who are high on the ASD spectrum, she could not identify which strategies would work for them. She felt that there is a need for "any kind of strategies that could work for a kid with high functioning autism to be taught during teacher education programs. Therefore it can also be interpreted that teachers face challenges in implementing effective classroom strategies to manage and engage students with ASD who have high needs.

Joy (RG), on the other hand, felt that it would have been beneficial to her if she had been provided with an exposure to the approaches such as how Education Adjustment Programs (EAPs) are to be implemented. According to Education Queensland (2019), Education Adjustment Program (EAP) is a procedure for recognising and responding to the instructive needs of students with disabilities including those with ASD, and who require extensive educational adjustments to suit their needs. Joy felt that she lacked the skills presented by the EAP initiative for students with some form of learning disability at an appropriate time when she entered her teaching career.

To gain maximum benefit, all teachers working with students with ASD need to understand clearly how the process of EAPs is implemented. Joy (RG) said that EAPs present

> …additional responsibilities for us as classroom teachers at our school, which I think a lot of us find a little overwhelming. At the same time, it's kind of important for you to have that because, if you're the one teaching them, you need to kind of be familiar with their Adjustment Plan to make sure that you're targeting what they need.

Accordingly, all teachers must be responsible for implementing EAPs for individuals with special needs, including those with ASD. Teachers must understand the three EAP processes as outlined in the Education Queensland EAP handbook (Education Queensland, 2019) . These are as follows:

➢ Verification -confirming that the student's impairment and associated educational needs meet [the] criteria for one or more of the EAP categories.
➢ The EAP profile - recording the frequency and intensity of education adjustments made for the student.
➢ Validation - a quality assurance process to ensure that the data obtained through the EAP profile is valid and reliable (Education Queensland, 2019, p. 4).

It is crucial that all teachers are aware of these three components of EAPs mentioned above to assist them to collect information, plan, develop programs and interventions, and evaluate and review those students who are eligible for such support. Thus, the components of EAPs must be incorporated within teacher

education programs or through professional development, either through workshops or via consultations. Evidence shows that professional development offered through workshops and consultations has been an effective source of perceived teacher self-efficacy (Gebbie et al., 2012; Lee, Patterson, & Vega, 2011b).

Apart from gaining "more exposure to how Adjustment Plans works", Joy (RG) also felt that during her teacher education program it would have been beneficial if she had been taught how to identify the behavioural needs of students with ASD and what specific strategies one needs to follow in order to refer these students to appropriate support services. For example, Joy commented,

> Looking at the process of referring students. Because a lot of the times you may be starting to notice some of these behaviours but knowing how to actually follow systems to write a good report, to refer them to have some intervention.

From this extract, it can be assumed that teachers lack the skills in identifying the unusual characteristics that are displayed by some students, and also that some teachers lack knowledge of the process of referring such students for further interventions.

From the reported interview data, it can be interpreted that the strategies for teaching students with ASD seem to be lacking within current teacher education programs. This finding is consistent with the research by Shelton (2013), who also found that the teaching strategies for students were taught generally, and that these strategies lacked ASD specificity. Moreover, Liacono and Allen (2008) found that the ASD specialised training is somewhat inadequate for current teacher education programs, making it significantly challenging for teachers to adapt to their students' actual learning needs.

Leblanc (2009) declared that it is important that all PSTs learn different strategies to identify their students' strengths. However, since ASD is a complicated disorder whereby children demonstrate significant variability in their level of functioning and acquiring learning skills, educating teachers in teaching these students is an ongoing challenge (Suhrheinrich, Dickson, Rieth, Lau, & Stahmer, 2017). According to the participants in this study, their teacher education programs

provided only an introduction to teaching students with ASD, since the participants recommended more comprehensive and in-depth study. This comment was confirmed by Winn and Blanton (2005), who have argued that teacher education programs offer only introductory courses about teaching special education.

Correspondingly, in an Australian study, it was found that there was a lack of comprehensive teacher education programs that includes information related to ASD (Coates et al., 2017). Further, even though teachers were trained in special education courses, they still lacked the specialised training to support students with ASD (Loiacono & Allen, 2008; Williams, 2014). This accords with the study of Pinto (2014), who states that "all teachers must implement effective teaching strategies in order to ensure and foster all students' success" (p. 3). Thus, it is important to consider some supplementary training to broaden the scope of practices in educating these students or through professional development.

Additionally, there are multiple teaching strategies that have been found to assist teachers in effectively teaching students with ASD. Some examples of these evidence-based strategies includes: Applied Behaviour Analysis (ABA); Developmental, Individual Difference, Relationship-Based Model (DIR); Discrete Trial Teaching (DTT); Picture Exchange Communication System (PECS); Social Stories; and Treatment and Education of Autistic and Communication handicapped Children (TEACCH) (Finch et al., 2013). Evidence has shown that each of these strategies has proven to be effective in educating students with ASD (Finch et al., 2013). TEACCH is American based acronym originated in North Carolina (Mesibov & Shea, 2010).

Other successful approaches include the Denver Model, focusing on the social needs of students with ASD, LEAP programming (where students learn from non-disabled students) and Floor time (where students engage with their teachers or support persons on a floor setting) (Shelton, 2013). All educators who work with individuals with ASD must be aware of these teaching strategies that work effectively with such students. Nevertheless, from the current study, it was found that teachers lacked the ASD-specific strategies mentioned above. Hence, teachers must be taught these skills through their teaching education programs through course-based content or through professional development.

Furthermore, Loiacono and Allen (2008) stated that "parents are increasingly requesting that special education and general education teachers incorporate ABA into classroom instruction" because of its effectiveness (p. 120). However, the findings from this study showed that teachers' skills and awareness in relation to the different EBPs, including the ones listed above, were generally lacking. Consequently, teachers find it extremely challenging to implement the successful inclusion of students with ASD in their classrooms. More information about different approaches to EBPs was discussed in chapter 5 of this thesis.

Considering the above argument, one can deduce that productive strategies with ASD-specific needs must be taught as part of teacher education programs, so that the teachers are aware of them beforehand. If so, it is likely that teachers may not feel too overwhelmed when they hear about the diversity of skills needed to teach students with ASD, especially if this occurs for the first time during their teaching careers.

7.4 Chapter summary

Although some participants felt that completing a special education course specifically about ASD had helped them to some extent in their ability to teach these students, they felt that they needed more in-depth training related to ASD. Whatever they had learned while completing the special education courses was covered only briefly and lacked ASD-specific strategies. From these findings, it can be confirmed that teachers need more comprehensive training in teaching students with ASD in inclusive settings.

Some of the ASD-specific strategies that teachers must be taught includes: characteristics of individuals with ASD; understanding of current research and evidence-based practices in ASD; multidisciplinary approaches to methodologies in ASD; behaviourally-based Approaches; emotional-based approaches; communication-based approaches; technology-based approaches; sensory-based approaches; and medically-based approaches (Shyman, 2012). These approaches taught in teacher education programs are essential to enhance teachers' knowledge, skills and self-efficacy related to educating students with ASD. Hence, teachers' self-

efficacy is likely to increase through training and coursework focused on teaching these students.

Increasing teachers' awareness of ASD-specific strategies will not only improve their self-efficacy and preparedness in teaching students with ASD, but also help them to be comfortable in adapting to different classroom pedagogies to suit the needs of their students, which in turn intentionally decreases their perceived stress in teaching in inclusive classrooms. In accordance with Bandura's (1997) self-efficacy theory, a strong sense of self-efficacy can bear failures and can conquer any form of stress efficiently. This is because an increase in teacher preparation through coursework and ongoing professional developments may improve teachers' effectiveness whereby, they can overcome the challenges that they faced in the classroom while educating students with ASD.

Undoubtedly, a lack of specialised training about teaching students with ASD may have a negative outcome in terms of student learning. Therefore teachers with inadequate training are likely to be less successful in their teaching roles and responsibilities. Both PS and in-service teachers must continually improve their skills and knowledge in providing the successful inclusion of students with ASD. DeNysschen (2008) found that teachers who received adequate and specific training were more confident about accommodating students with ASD, and had a more positive perspective towards inclusive education.

Additionally, all participants in this study understood the importance of learning about ASD through their teacher education and felt that there should be a standalone course specifically focusing on ASD, which should be completed by all teachers, not just those who specialised in special education. Other researchers have commented that, for successful inclusion to take place, special education courses must be compulsory, and there should be some mode of practicum about specifically teaching students with special needs in teacher education (Chhabra, Srivastava, & Srivastava, 2010; Forbes, 2007). This is because of the increasing number of such students in mainstream classrooms. Notably, not everything can be learned during teacher education because of limited time constraints, limited university funding and teaching staff members' workloads.

Therefore, in order to build their teaching capacity in educating students with ASD, it is important that both PS and in-service teachers undertake ongoing professional development, as was discussed above in this chapter. A study by Lee, Patterson and Vega (2011b) found that there is a significant correlation between quality professional development and teacher self-efficacy. Teacher education must incorporate multiple teaching strategies such as Applied Behaviour Analysis (ABA); Developmental, Individual Difference, Relationship-Based Model (DIR); Discrete Trial Teaching (DTT); Picture Exchange Communication System (PECS); Social Stories; and Treatment and Education of Autistic and Communication Related Handicapped Children (TEACCH) in teaching pre-service teachers. Both PS and in-service teachers must also consider undertaking professional development in these areas.

Finally, the findings of this chapter reaffirm that all PS and in-service teachers must commit to ongoing professional development since not everything can be learned and remembered during teacher education programs. Further combinations of teacher education and professional development related to teaching students with ASD will enhance their self-efficacy and preparedness in teaching students with ASD.

Chapter 8 Conclusion

8.1 Chapter overview

This chapter concludes with the findings related to PSTs' and RGs' perceptions in teaching students with ASD in Australian inclusive classrooms. Using the self-efficacy framework proposed by Bandura (1977), the aim was to address the research questions that follow, while Chapters 5, 6 and 7 are referred to as evidence gained from qualitative data analysis in answering these questions:

(1) What were the pre-service teachers' and the recent teacher graduates' views about the inclusion of students with ASD conditions in inclusive classrooms?

(2) What were the pre-service teachers' and the recent teacher graduates' self-efficacy beliefs and preparedness in educating students with ASD conditions, and f the contributing factors leading to their self-efficacy and preparedness?

(3) What were the participating pre-service teachers' and the recent teacher graduates' teacher educational experiences, and what are may be some of the ways of improving their skills and knowledge in teaching students with ASD conditions?

The conceptual framework that was presented in Chapter 3 is used to explore the phenomenon related to these research questions, and also to answer these questions. Following this, a modified version of the conceptual framwork is presented in this chapter. This chapter then discusses the study's contributions to knowledge, followed by the study's limitations and delimitations, and key recommendations for future research in this area of scholarship. Finally, a summary of the conclusions drawn from this doctoral study are presented.

8.2 Findings arising from the research questions

The qualitative case study approach in this study used interviews to provide an in-depth exploration and deeper understanding of the participants' self-efficacy, preparedness, experiences, and opinions about teaching students with ASD in

Australian inclusive classrooms. The literature review identified no existing study in Australia that specifically studied teachers' self-efficacy and preparedness in teaching students with ASD. Therefore, this research helps to fill that identified gap in the existing literature. Furthermore, this research is intended to have implications for school policies, teachers, school leaders, educational bodies, and teacher education programs in that it suggests more opportunities to prepare teachers in teaching students with ASD more effectively.

The interpretation and discussion of findings are presented in this section of the thesis, clustered around each research question, as outlined in Section 1.5.

Findings arising from Research Question 1

An analysis of data exploring research question 1 has demonstrated that both the PSTs and the RGs understood inclusion in general as well as the potential benefits it offers to students with ASD. However, the teachers felt that they had limited knowledge about ASD and did not have any experience in working with these types of students. For example, one of the participants, Bella (PST), mentioned in the interview that the teaching duties during her first practical experience were "not easy." She further said that she "didn't have the knowledge or the experience" to successfully accommodate these students in her classroom.

Maria, who was a PST, and Nina, who was an RG, said that their knowledge required for a good understanding of ASD was "pretty low" and therefore they generally felt less prepared to teach students with ASD. These findings were similar to those of Gordon's (2017) in whose study general classroom teachers appeared to lack essential knowledge about ASD and also felt inadequately trained during their teacher education programs. Therefore, as mentioned by one of the RG participants, it is crucial to "have teachers who are capable of, or knowledgeable enough, to support students with ASD" so that an active learning and teaching process can take place.

Given the relatively complex characteristics that are displayed by students with ASD, teachers must be well equipped with the knowledge and skills about evidence-based practices (EBPs) that are needed to teach students successfully (Strong, 2014). It is important to include certain EBPs in teacher education programs

(Odom, Collet-Klingenberg, Rogers, & Hatton, 2010) to develop effective teachers. By contrast, in this study it was found that none of the respondents exhibited precise applications of the EBPs in their practice, despite a few of them mentioning they understood what EBPs meant. However, they did not remember learning the concept explicitly or applying it within their classrooms. For instance, Bella (PST) stated that although she was able to apply the practical aspect of evidence-based strategies into a classroom, she could not ascertain whether she had learned them during her bachelor's degree. This result was consistent with two prior studies, by Bain et al. (2009) and Hendricks (2011), who drew a similar conclusion about teachers having limited knowledge and experiences with EBPs.

Additional insights gleaned from the analysis of results related to research question 1 revealed barriers to inclusionary practices within their classrooms or in their schools, since they were not able to provide an optimum level of support to their students with ASD. Some of the barriers were within the context of a lack of proper funding that had led to inadequate support within the classroom, large class sizes, and limited time available for planning to teach students with ASD and dealing with challenging behaviours. All of these may lead to teachers' stress and low levels of self-efficacy in teaching these students. A few of the participants also mentioned that not all full inclusion is a success. It depends on the severity of the ASD demonstrated by the student. Hence, the present study has identified that these barriers must be addressed adequately to provide equal learning opportunities to all students, irrespective of their learning disabilities.

Findings from Research Question 2

The exploration of data related to research question 2 appeared to identify pertinent factors that may influence teachers' perceptions of their self-efficacy and preparedness in teaching students with ASD. It was found that more classroom experience and hands-on teaching can influence teachers' self-efficacy, including their general feeling of preparedness in teaching such students. If these are satisfied, they may lead to a better mastery experience, which is considered to be one of the potential sources of self-efficacy, as identified by Bandura (1977). This concurs with other research evidence that has demonstrated that teachers with high levels of self-efficacy are likely to have more robust mastery experiences (Bhatia, 2012).

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As per Bandura's model (1977, 1987, 1997), which forms the theoretical basis of this research thesis, mastery experiences are likely to enhance one's self-efficacy. On the other hand, any experiences of failure during mastery experiences may hinder the progression of self-efficacy. Furthermore, to gain mastery experiences, one needs sufficient time, effort and commitment. It is worth mentioning that RGs were slightly more confident that the PSTs, since they were exposed more broadly to authentic experiences of teaching students with ASD. PSTs and RGs reported that more hands-on experiences and exposure to classroom teaching could enable them to better understand their students. Other related research evidence in this area has also demonstrated that teacher preparation through field experiences can have a significant impact on mastery experiences (Cantrell et al., 2003; Lastrapes & Negishi, 2012; Leblanc et al., 2009), thus supporting the findings of this study in relation to research question 2.

With respect to research question 2, it was also found that participants who had had previous contact with individuals with ASD were more knowledgeable and confident than those who had never had any associations with individuals with ASD. Previous contact, as revealed in qualitative data analysis process, was established in terms of: (I) a personal relationship as parents with a child with ASD, or (II) having previously worked with individuals with ASD as a volunteer or a teacher-aide. Although a few participants had mentioned that they felt confident with respect to addressing behavioural and social needs of such students, they nonetheless reported that they lacked the primary skills to address their academic needs. One possible interpretation of this result is that some degree of prior contact with individuals with ASD can create one's openness towards inclusive practice. Prior contact with individuals with ASD has the potential to influence teachers' attitudes towards inclusion, as supported by a previous study showing that PSTs with relatively extensive contact with individuals with disabilities demonstrated more positive attitudes towards inclusive practices (Thaver, Lim, & Liau, 2014).

The qualitative data addressing research question 2 also showed that teachers were willing to learn through their mentor teachers. That is, teachers can gain *vicarious experience* (Bandura, 1977, 1987, 1997) by observing and modelling their mentor teachers and colleagues. For example, a PS participant mentioned during

their interview that "anything I have learned as a strategy in the classroom has come from my mentor teachers". It is important that during practicum experiences PSTs relate well to cooperating mentor teachers, who can both guide and assist them during their teaching practicums. According to Sunjin (2010), "cooperating teachers provide self-efficacy information for the student teachers in the form of vicarious experience (modeling) and verbal persuasion (positive feedback and encouragement)" (p. 4). Hence, it is important that PSTs work in collaboration with their mentor teachers, who are highly experienced about ASD aspects and are also nominated by their school leaders.

The respondents of this study further reported the importance of building positive rapport with students to understand their academic, behavioural and social needs. Understanding students' backgrounds is crucial to support them in integrating successfully into inclusive classrooms, and to gain a more complete picture of their needs. These results indicating the importance of building rapport with students, is consistent with a study conducted by Wills (2017), in which it was recommended that teachers have open communication with students and their parents in establishing a positive strategy that works best for their students. Furthermore, according to Saddler (2014), a "strong pastoral relationship built between children identified with special needs" (p. 150) and those with ASD can strongly influence positive inclusion, which may also have an impact on teachers' self-efficacy in accommodating these students successfully in their classrooms.

Finally, the data analysed for research question 2 found that parent-teacher liaisons as well as the liaisons of teachers with some of the other para- professionals, such as school guidance officers, occupational and speech therapists, clinical psychologists and physiotherapists, can be beneficial. The data from the PS respondents revealed that they did not have opportunities to liaise with parents. One of the key elements of Individual Education Plans (IEPs) for students with ASD is to have a meeting with the child's parents to gather valuable information about their child. Hence, it is important that PSTs are also provided with sufficient opportunity to liaise with parents and other para-professionals. These teachers, however, also need to be taught strategies about how to establish better communication with parents and some of the other paraprofessionals to gain further insights into students

diagnosed with ASD. This will not only establish positive relationships with parents and other experts but may also influence teachers' self-efficacy in creating successful learning opportunities for all students within the classroom.

Finding from Research Question 3

From the data analysis related to research question 3, it became evident that respondents who completed special education courses felt they had acquired more knowledge and skills about the inclusion of students with ASD than those who had not completed such courses. These respondents felt more efficacious than those who had never studied a special education course. Importantly, this finding was consistent with other studies that have revealed that PSTs' self-efficacy appeared to improve significantly through better university coursework studies (Cantrell et al., 2003; Watters & Ginns, 2000). To associate these findings with qualitative data analysed in the present study, the participants also revealed that, even though they had completed the courses in special education, they still needed more comprehensive strategies in teaching students with ASD. While the exact cause of this is not clear yet and may require further investigation, it could be owing to the complex and multi-faceted behaviours demonstrated by individuals with ASD, where they need some degree of specialised instruction to suit their individual student needs.

For example, students with ASD face difficulties in communication, lack social interaction abilities, and portray ritualistic behaviours that make them resistant to any change (The American Psychiatric Association, 2013), and if these distinctive characteristics of students with ASD are prevalent, it can become challenging for teachers to address their distinctive needs in regular classrooms. Therefore, teachers must have skills in adapting an array of useful instructional strategies for these students. Having said that, in terms of policy and practices in relation to courses in the special education area, this may suggest that insufficient resources to support such teachers could be a secondary factor influencing teachers' self-efficacy.

It must be noted that some research studies performed outside of Australia (Humphrey & Lewis, 2008; Symes & Humphrey, 2010) have shown that schools struggle to keep pace with addressing the unique needs of students with ASD. This is because the overall strategies learned by teachers for teaching normally developing

students does not appear to work well with some students with ASD. This can also be noted in the present study, whereby Hope, an RG participant, stated that she had had some experience with a very high-level student diagnosed with ASD in her class and felt that normal strategies did not appear to work for him since he was quite difficult to manage. Moreover, Anna, a PST, also commented that half of the time they were not aware of the what strategies to put in place in order to handle these types of students. Considering these results, it can be inferred that although teachers may be taught the materials that expand their understanding about the basics about ASD, it may be beneficial to learn more specific teaching approaches related to teaching these types of students.

The analysis of the qualitative data suggests that all teachers must undertake a compulsory special education course, rather than an elective, about ASD, given the increasing number of students with ASD in general classrooms. This finding is consistent with Busby et al. (2012), a study performed outside of Australia, who also recommended one additional course about ASD as a requirement for all undergraduate teachers at Troy University in South East Alabama. In spite of some differences between education in Australia compared to the USA, this proposal is also supported by the Australian Association of Special Education (AASE) (2018). Taken together, the findings of this the present study indicate a need for in-depth training and professional development opportunities for all teachers to enhance their teaching capabilities in relation to teaching students with ASD in inclusive classrooms.

To enhance teachers' capabilities in teaching these students, a greater number of workshops with videos, reviewing external body websites about ASD, reviewing online open resources, and collaborations through different means of networking, need to be explored. It is also important to consider what components in the ASD area are required to be taught at the PS level. For example, nine components of ASD that may be included in teacher education programs taught to pre-service teachers could potentially include: characteristics of individuals with ASD; understanding of current research and evidence-based practices in ASD; multi-disciplinary approaches to methodologies in ASD; behaviourally-based approaches; emotional-based approaches; communication-based approaches; technology-based approaches;

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sensory-based approaches; and medically-based approaches (Shyman, 2012). However, the participants involved in this study completed the ASD course as an elective in which they learned topics on understanding ASD, including speech, language and communication issues faced by these students, understanding challenging behaviours and management of these behaviours, understanding social world and its meanings, and awareness of sensory factors and sensitivity. Those participants who completed these aspects of ASD felt more confident than those who had not studied this course.

Additionally, it became apparent that there was a possible lack of professional development specifically focussed on universal design for learning for ASD, and how one may cater for the differentiation of teaching design while working with these students. This finding was in alignment with other literature indicating a lack of ongoing developments within the Universal Design for Learning (UDL) framework, focused on the ASD teaching area (Holdheide & Reschly, 2008). Additionally, the participants in the present study also stated that they generally lacked knowledge about, or experience with, ASD-specific strategies, including important aspects such as the Education Adjustment Program (EAP). Considering the benefits of initiatives such as EAPs are likely to bring to students with learning difficulties, including those with ASD, this aspect is something that teachers should be able to explore further, either through PS training or through targeted professional development. Therefore, strategies such as UDL and EAP, which integrate well with knowledge delivered in a teacher education program, can make these teachers feel confident in dealing with such students. The next section of this chapter discusses the study's contributions to various kinds of knowledge.

8.3 Contributions to knowledge, policy and practice

This research study's methodology, and the findings obtained, make a significant contribution to the knowledge encompassing numerous fields of study, but most importantly, those associated with teaching students with ASD conditions. This study can provide a distinctive and invaluable contribution to the domains of inclusive education for all students with special needs and with some form of learning disabilities, and this may not be restricted to only those diagnosed with ASD conditions. An exploration of the published literature in this area has shown that,

although there is extensive research about ASD conditions, major gaps can be identified regarding successfully teaching these students, based on teachers' classroom experience and perspectives.

This study has yielded additional insights into the concerns and challenges faced by teachers when teaching students with ASD in inclusive settings. A significant gap in teachers' knowledge and skills was identified in implementing ASD-specific approaches and EBPs in teaching students with ASD. This research is significant since it adds knowledge and provides insights for educational researchers, teachers, individuals with ASD, higher education institutions that provide teacher education programs, and educational bodies in preparing future efficacious teachers in educating not only students with ASD, but also all those who have special learning requirements.

To the researcher's best knowledge, no previous study has been conducted in Australia that has specifically adopted a qualitative case study as a means of collecting data on final year PSTs' and RGs' self-efficacy beliefs and preparedness in teaching students with ASD conditions in mainstream classrooms. The three distinct categories of the body of knowledge to which this study has contributed are discussed below.

8.3.1 Contribution to theoretical knowledge

The conceptual framework of this study, guided principally by Bandura's self-efficacy, has added significant value to Bandura's model itself, thereby contributing towards theoretical knowledge development with respect to teaching students with ASD in inclusive classrooms. According Bandura's (1977) original work, self-efficacy is defined as an individual's belief in his or her ability to succeed in a situation in which they are placed, for example teaching students with ASD. However, Bandura's focus on self-efficacy was largely positioned from an individual and a personal perspective, while this study has demonstrated a new and rather different form of self-efficacy. That is, data collected from participating teachers was centered on 'collective efficacy beliefs', whereby these teachers appear to feel more confident if they are being supported by their school administrative sections, mentor teachers, teaching colleagues, and teacher aides. They are subsequently more likely

to work collaboratively to plan and evaluate their teaching activities and effective strategies with regards to students with ASD. Therefore, this study advocates a collective form of self-efficacy based on an analysis of data from 16 participants within two separate groups (i.e., pre-service teachers and the recent teacher graduates). Thus, collective teacher efficacy can be developed through the formation of social networks as part of which a classroom teacher is able to collaborate with other teachers and share their experiences and resources about teaching students with ASD.

To explore the contributions made to collective efficacy beliefs in support of Bandura's model, it is also noted that teachers' collective efficacy beliefs can be largely grounded in teachers' frequent liaison with parents of students with ASD, other experts such as speech pathologists or psychologists, and building a positive rapport with students with ASD. All the data presented in previous sections clearly indicate the contributions made towards collective efficacy within the Bandura model, in such a way that it shows how teachers can work together as a social team to support students with ASD and improve their self-efficacy beliefs in the process. Yet, the teachers' collective sense of efficacy, as stipulated in this study, may also relate to the availability of resources and sufficient funds provided within the educational institution. Collective efficacy can be considered a team-based attribute where everyone has a shared responsibility in teaching students with ASD to promote successful inclusionary practices. Finally, contributions to theoretical knowledge are expected to broaden our understanding of the theoretical associations between "inclusive practices" and the phenomenon of ASD.

In Table 8.1, the theoretical contributions of this study, and consequently its ability to generate rich and in-depth information with diverse perspectives of self-efficacy (i.e., contributing to theoretical knowledge of collective self-efficacy), are used to elaborate on the research questions that were initially presented in Chapter 1. Hence, this contribution relates to the investigation of collective self-efficacy that the two groups of teachers (RGs and PSTs) attained, as well as their goals and accomplishment of the desired tasks, which was all considered as part of a broader perspective, rather than just individual self-efficacy (Bandura, 1986).

Teacher Education
- ✓ ASD specific strategies
- ✓ Hands-on experiences
- ✓ Evidence-based approaches
- ✓ Compulsory course on ASD
- ✓ Teacher placements/practicals while observing and adapting different and successful style of teaching

Support offered to teachers and students. (e.g., funding for teacher-aides, administrative support, ASD specific resources)

Liaison with parents, building rapport with students, liaison with experts, such as the speech therapist or the psychologist

Successful experiences in teaching students with ASD

Increase in PST & RG self-efficacy and preparedness in teaching student with ASD

Collective self-efficacy

Decrease in PST & RG self-efficacy and preparedness in teaching student with ASD

- ✓ Mastery experiences
- ✓ Social and verbal persuasion
- ✓ Physiological and affective states
- ✓ Vicarious experiences

Social networking with individuals who work with individuals with ASD, and collaboration with work colleagues and other professionals

Ongoing professional development opportunities for teacher

Severity of ASD

Teachers' challenges - behavioural issues, time constrains and class size

Contact with individuals with ASD influence teacher self-efficacy, e.g. being a parent of child with ASD, worked as a teacher-aide, or volunteer work with individuals with ASD
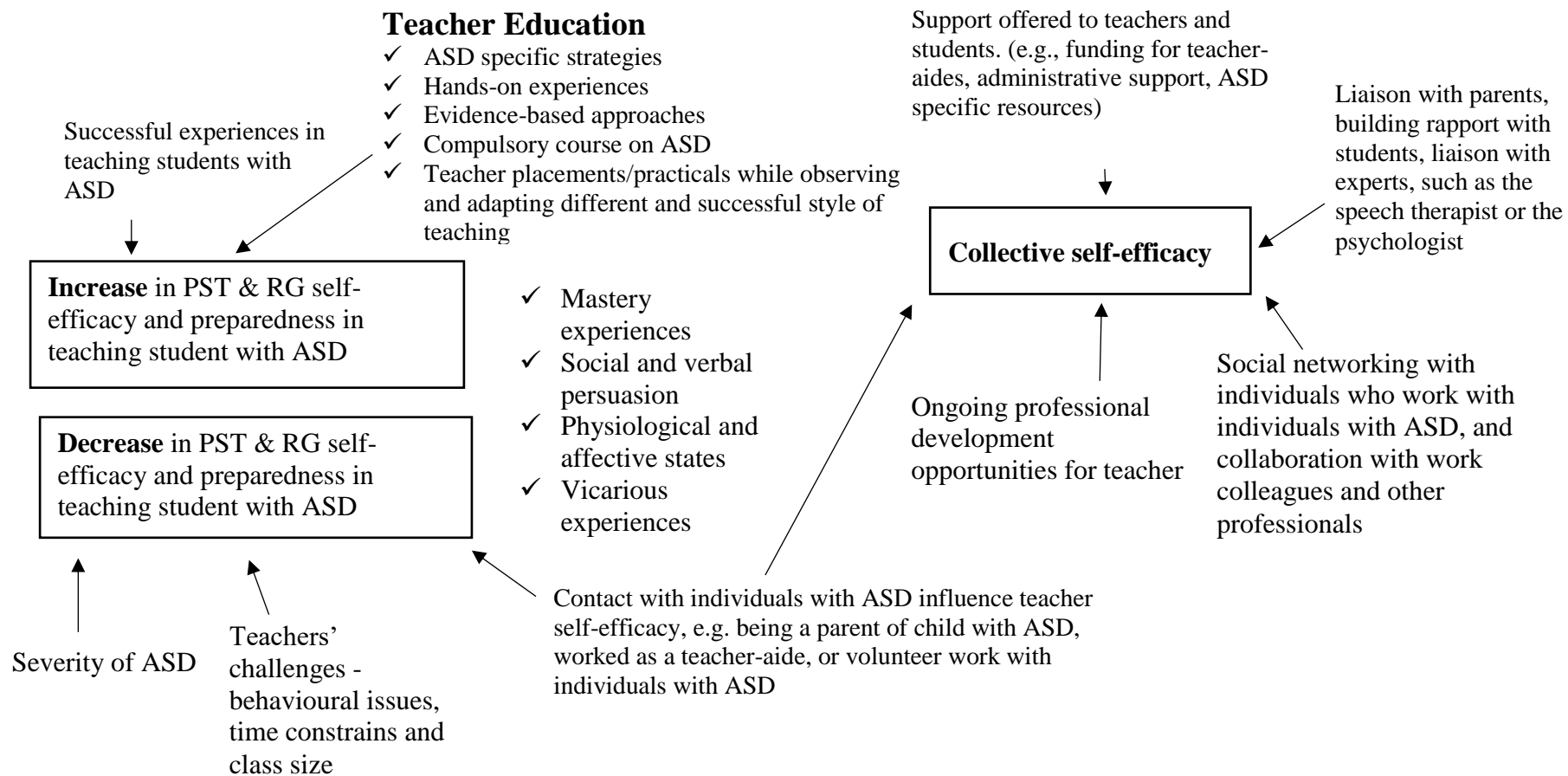
Figure 8. 1. Updated conceptual framework schematised with the findings of this study

8.3.2 Contribution to methodological knowledge

A qualitative exploratory case study was adopted to collect and analyse data, which enabled me to investigate teachers' perception of inclusion and their self-efficacy and preparedness in teaching students with ASD. This study thus made a major contribution in terms of formulating a new qualitative approach that is able to explore collective self-efficacy, allowing for methodological improvement over most other studies that have largely been confined to quantitative methods. The quantitative means of investigating self-efficacy beliefs using measures such as Likert scales appeared to dominate existing literature, while a qualitative means of exploring self-efficacy was largely neglected, despite it providing thicker, richer and more in-depth data sets. Hence, this study has also contributed towards exploring future qualitative methodologies relevant for understanding self-efficacy and teacher preparedness.

By making key contributions towards methodological knowledge, the new methodology developed in this study has helped to develop an in-depth understanding of the phenomenon under investigation and clarify and explore teachers' voices with regards to teaching students with ASD as part of inclusive practices. The use of 'within' and 'cross-case' analysis of data between PSTs and RGs has helped to compare their self-efficacy and preparedness and explore how various factors or experiences influenced teachers' confidence in teaching these students. The use of interviews has also enabled both PSTs and RGs to communicate about their views and develop an understanding of their experiences, concerns, and challenges, which was valuable in this research study to benchmark their overall self-efficacy and preparedness.

Given that there has been a limited amount of research on the phenomenon under investigation in this study, the use of an exploratory case study should be acknowledged. An exploratory case study is often recommended when there is a limited amount of research available on the topic under investigation (Mayer & Greenwood, 1980).

8.3.3 Contribution to policy

The findings of this study have implications for policy development such as advocating a need to incorporate improved curriculum content for all teachers in order to help them educate students with ASD in inclusive classrooms. Teacher education programs and educational sectors in general may also use the findings of this study to identify gaps in educating students with ASD and identify alternative ways to enhance teachers' self-efficacy and preparedness. Education leaders, both at government and non-government levels, who are involved at a policy decision-making level may potentially promote alternative pathways and opportunities such as compulsory on-going PD/training/professional learning communities to prepare more efficacious teachers for students with ASD.

According to Edmonds and Spradlin (2010), "professional learning communities where teachers can share a common mission" (p. 325) can be embedded in teacher support programs since professional learning communities have actively influenced teacher self-efficacy (Edmonds & Spradlin, 2010). The study also makes important contributions towards policy for teacher education and professional development standards, designed to include support for the development of novice teachers who may deal with students with ASD (Strong, 2014).

This study can act as a source of information and updated evidence required to inform educational policymakers, teachers, researchers and other external bodies that must acknowledge the urgency to transform educational practices and process and should work collaboratively to support the development of novice teachers. Such policies on inclusive practices may not only enable higher institutions to modify the curriculum in teacher education programs, but they may also allow changes to school procedures and practices in supporting teachers to promote positive teaching and learning for students with ASD. Furthermore, this study can be an avenue for policy makers to identify general ways to support teachers with increasing workloads, and large class sizes, through identifying funding and resources required for successful inclusion practices.

In this study, it was further recognised that many teachers felt that the teacher education programs should have a compulsory ASD-based course, set for all teachers, to help gain a greater understanding of ASD and inclusion. Thus, this study has important implications for additional coursework for all teachers as a compulsory

component that can provide detailed information and new strategies in teaching students with ASD. These strategies must also include good knowledge of EBPs and practice-based scenarios of teaching these students. University courses must further be linked with additional, authentic, open, online resources or professional development websites that are based on teaching students with ASD. This may be particularly useful given the time constraints in covering detailed components about ASD during teacher education programs.

8.3.4 Contribution to practice

In the context of practice, this study has contributed generally to the field of educational research and more specifically, has provided insights into how to improve teachers' confidence and preparedness in educating students with ASD. Evidence from the scholarly literature has demonstrated that there is an increased number of students with ASD being placed in inclusive classrooms, which consequently leads to challenges in classrooms, owing to lack of teachers' skills and knowledge related to how to accommodate these students successfully in their classrooms. These classroom challenges affect not only the teachers but also the students (Fein & Dunn, 2007). Understanding the academic, behavioural and social needs of these students must be considered by the teachers as part of an effective learning and teaching process. This study has clearly confirmed the need for teachers to be trained in ASD-specific strategies/EBPs in educating students with ASD. Furthermore, teachers must understand ASD characteristics broadly, establish positive student-teacher relationships, and liaise with parents and other professionals to identify the triggers leading to challenging behaviours faced by these students.

The findings from this study also have implications for teacher education programs and the need for ongoing professional development for all teachers of students with ASD. Evidence suggests that teachers' attitudes are influenced by classroom experiences, training, and their perception of available resources and support (Rodríguez et al., 2012). Apart from ongoing professional developments and training, it is important to have early induction programs whereby teachers are provided with handbooks or manuals containing specific guidelines and suggestions for teaching students with ASD. Induction programs with a highly experienced

mentor who has worked with these students can be a productive resource for early career teachers.

As it was noted that those participants who had prior knowledge about ASD through personal contact as parents, and who also had more classroom experiences, were more efficacious about teaching, and were better prepared to accommodate these students, further improvements should be put in place to prepare those PSTs and novices more effectively (Busby et al., 2012; Scheuermann et al., 2003). It was found that participants who studied special education courses and who had taken ASD specific courses as electives were generally more confident in their ability to teach.

Not all PS participants had found the opportunity to liaise with the parents and other experts during their teaching practical. Since parents play a significant role in advocating for their child by providing valuable information to teachers for planning their child's teaching, it is important that these teachers are taught strategies to seek and accommodate parental insights into teaching these students. During teacher education programs, teachers of students with ASD must be given opportunities to meet and cooperate with parents or family members to establish collaborations for positive student outcomes. Collective teacher efficacy can be formed through collaborating and liaising with parents, teacher-aides, learning support teachers and other professionals, such as psychologists or speech pathologists, who work with students with ASD. These are likely to contribute significantly towards theoretical knowledge on collective self-efficacy.

According to Busby et al. (2012), these collaborations "should be in the context of routine and successful educational planning and documentation (such as IEP meetings)" (p. 34). Establishing a positive collaborative relationship not only with parents, but also with other teachers and para-professionals who work with these students is important to gain further insights into ASD. Building a positive rapport with students may also influence teacher self-efficacy. Teachers need to know their students well within their practicum experience or during their teaching careers, so that they understand their needs and build positive working relationships with them. Prior experiences in working with students with ASD enhances teacher effectiveness and attitudes. This was supported by Syriopoulou-Deli, Cassimos,

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Tripsianis & Polychronopoulou's (2012) study about teachers' perceptions associated with teaching students with ASD.

The participants in this study also mentioned the need to gain more hands-on experiences in teaching students with ASD. This could be very useful to teachers who do not have any prior contact or experiences in dealing with these individuals. Additionally, research has shown that a computerised simulated classroom would be a useful tool for teachers of students with ASD to enhance their capability; although it would not be real classroom-based learning, it would still be very useful for teachers with limited opportunities for real classroom teaching. The use of this technology would or could involve "online training packages using simulated students and teachers" (Strong, 2014, p. 107). For example, one study outside Australia used web-based, simulated classrooms called SimSchool to evaluate PS and in-service teachers' preparedness in teaching special needs in inclusive classrooms (McPherson, Tyler-Wood, Ellison, & Peak, 2011), and found that teachers' skills and self-efficacy were enhanced through web-based, simulated classrooms.

This study also revealed that support must be in place for those teachers who are new to the teaching profession, which in turn may influence their self-efficacy and preparedness. Support in any form is important for teachers to thrive in challenging teaching environments. Teacher preparation in teaching involves not only building knowledge and understanding about ASD, but also accessing support and resources (Leblanc et al., 2009). According to Mohrman and Lawyer (1996), teachers who feel supported, whether through resources, leadership or school policies, are able to sustain a more optimistic performance in their classroom.

Another important implication of this study could be the identified importance of forming supportive networks for both PSTs and RGs. Supportive networks would be particularly useful for teachers who work in remote areas (Sharplin, O'Neill, & Chapman, 2011). Supportive networks can be at the university, outside school or in an online mode where teachers can exchange knowledge about ASD and share their experiences, challenges, effective teaching pedagogies/lessons and resources. Sharing knowledge with, and seeking advice from, other teachers

through collaborative networks may contribute to teachers' sense of self-efficacy (Lin, 2007), since valuable information is shared within collaborative teams.

8.4 Recommendations for future research

In this doctoral study, the phenomenon explored was PSTs' and RGs' self-efficacy and preparedness in teaching students with ASD in inclusive classrooms. Although this study has provided valuable information about this phenomenon, additional research is needed since the number of students with ASD continues to grow in mainstream classrooms. Consequently, teachers need to be well-equipped with appropriate knowledge and skills in effective teacher strategies to successfully accommodate these students in their classrooms. More research is needed about the effects of EBPs on these students' learning, and about the association with teachers' self-efficacy and preparedness in implementing EBPs.

This study has revealed that teachers faced challenges and were concerned about not providing optimum levels of support to students with ASD. Therefore, further research is required to investigate why these teachers faced those challenges, and what more could be done to help them overcome these challenges and concerns. The challenges faced by these teachers led to stress, which eventually lowered their self-efficacy and their job satisfaction. Hence, additional research is needed that examines teachers' stress related to the challenges faced while teaching students with ASD and their perceived self-efficacy.

This same study could be replicated with different groups of teachers, possibly with more years of teaching experience. The current study looked only at primary school teachers; high school teachers could be considered for further study of this phenomenon to offer different perspectives on their self-efficacy and the effective teaching strategies that they employ with these students. Additionally, the present study explored only final year PS and RG teachers; it would be worthwhile to compare teachers' self-efficacy at different stages of their career, such as beginning, mid-career and late career. Additional research about the role of parents, para-professionals and additional support systems placed in schools and their relationship with teacher self-efficacy needs to be considered too.

Moreover, added research about the types of professional development or training that may influence teacher self-efficacy and preparedness needs to be considered in teaching students with ASD. Given the increase in the population of students with ASD, the field of teacher education must consider more training opportunities for the teaching of these students (Mathews, 2017).

A significant gap was also identified in terms of what is effective professional development for teachers when it comes to teaching students with ASD, which could raise teachers' self-efficacy and preparedness as well as promoting the practice of EBPs (Strong, 2014) . This is another critical phenomenon that can be explored in future studies. Training opportunities to enhance teachers' capacity in teaching students with ASD must be undertaken during teacher education programs and throughout teachers' teaching careers.

8.5 Delimitations and limitations

Like all studies, there are limitations and delimitations that need to be acknowledged. One limitation that may have affected the outcomes of the study would depend on how truthfully participants answered the questions. Issues such as the inclusion of students with ASD are delicate and bound by legal requirements and pertain to society's expectations. Therefore, these considerations may have influenced whether and how the participants answered interview questions in a positive and favourable manner.

Furthermore, a purposive sample of PSTs and RGs from one university was recruited for this study, and all the respondents were females from primary school teaching backgrounds, despite numerous attempts to recruit more respondents. The results may have provided more insightful data if respondents had had more diverse backgrounds, including those from secondary school teaching backgrounds and male respondents. Hence, the location of the study and the choice of respondents may have limited the generalisability of the findings to teachers of a different gender and/or teaching at secondary school levels.

Another limitation could be that all the data were collected through interviews; hence the data collection depended on what the interviewees were willing to share and may have been limited to their own perspective and experiences. The use of interviews may have limitations as well, even if it generated in-depth responses from the participants. While this study has provided significant advancement and contributions to knowledge for teacher education programs, one limitation was the sole reliance on interview data collected via the telephone. However, a follow-up study should seek observational data that could perhaps depict the contextual factors that influence the participants' views of inclusion and their perceptions of self-efficacy in teaching students with ASD. If this is implemented for the RGs who work in particular school settings, the investigation would be consistent with a social constructivist perspective, as well as with the notion of collective self-efficacy. This was beyond the scope of the present doctoral study and therefore awaits an independent investigation.

The delimitations of the study included respondents being from only one Australian regional university; therefore, the findings were narrow in scope (Creswell, 2003). Undertaking an exploratory case study in only one university can be viewed as a delimitation.

8.6 My personal note revisited

At the beginning of this study I explained my personal experiences as a classroom teacher and my interests in teaching students with ASD in inclusive classrooms. Owing to my limited knowledge about ASD and related specific teaching pedagogies to successful accommodate these students in inclusive classrooms, I was inspired to pursue doctoral research in this area to identify the voices of other teachers in respect to teaching students with ASD. Reflecting on my own self-efficacy as a teacher of students with ASD ultimately led me to become the research I am now. Completing my doctoral studies was the driving force that helped me to build on my own self-efficacy to pursue my goal as a researcher by overcoming challenges.

As a novice researcher, comprehending the process of research design to represent innovations and advancements of ideas was a "daunting task" initially,

because of my limited skills in research, as I had completed my master's with coursework and had no real prior knowledge about research. This was the main reason I pursued the Doctor of Education program, so that I could engage in the coursework component to learn the basics of research methodology, ethics and politics of research, data collection and analysis. Studying the coursework component of my doctorate program has increased my knowledge and confidence to conduct educational research.

My research journey has been a steep learning curve with some hurdles in research design and choice of methodology. However, I was able to overcome the challenges with the continuous support, motivation, and encouragement from my supervisors and my family. My doctoral learning journey has been a very satisfying and empowering experience. Hearing success stories from other students on completing their theses inspired me further in my own efficacy to complete my doctorate research. To further enhance my skills in research, I read journal papers and theses, and undertook professional development on data analysis tools such as NVivo. My self-efficacy as a researcher not only involved the development of skills, but also a sense of confidence through knowing I was on the right track with my research journey, which was provided through direct feedback from my doctorate supervisors. Getting direct feedback from my supervisors in the form of "verbal and social persuasion" (Bandura, 1977, 1982, 1997) further influenced my self-efficacy to become a researcher. Encouragement from my doctorate supervisor such as, "onwards and upwards!" further motivated me to accomplish my goal in completing my thesis.

I concur with Bandura's "performance accomplishment", which is another source of self-efficacy, where he stated that successes "provide the most authentic evidence of whether one can muster whatever it takes to succeed" (Bandura, 1997, p. 80). Since my doctoral confirmation proposal and seminar went well and I passed my coursework components with good grades, it uplifted my confidence in my ability to complete my doctorate. Today as a doctoral researcher I am entrusted to develop research skills and contribute to the educational needs of students and improvement of teacher quality. I see myself as a researcher in the classroom who engages and reflects on my practice and questions why students execute and function in a

particular manner. Through the nature of qualitative research, I now feel more confident in my ability to engage in interviews with participants. This reflection portrays my journey from a teacher to a researcher and explores the philosophically developed, conceptually informed, methodologically framed and empirically grounded engagement with the proposition "*The researcher I am is the person I am.*"

8.7 Chapter summary

This chapter has concluded with a synthesis of the research findings, followed by the contributions to knowledge. This chapter has further discussed this study's contribution to theory, methodology, policy and practice. The recommendation for future research studies around the phenomenon on teaching students with ASD was explored as well. Finally, the study's limitation and delimitation were presented, followed by a reflection on the building of the researcher's self-efficacy as a researcher. The study has demonstrated that all the teachers understood the inclusive practices; however, they lacked confidence and were unprepared to address the challenging needs of students with ASD. Teachers were concerned that they were not able to provide the best level of support to students with ASD owing to large classroom sizes, limited time for planning, challenging behaviours, lack of support, lack of funding and ASD-specific resources. These are all additional factors that may have an impact on teacher self-efficacy and preparedness to teach students with ASD. Therefore, the findings of this study suggest that teacher self-efficacy and preparedness to teach students with ASD are not only enhanced through education, but also through supports, funding, and resources.

Moreover, some of the paramount factors that were considered to influence teacher's self-efficacy include more classroom experiences, having previous contact with individuals with ASD, guidance and support from experienced teachers, teacher-aides, and school administrations. This study has confirmed that establishing rapport to build positive relationships with students with ASD may enable teachers to understand their students' characteristics and to successfully cater for their needs in inclusive classrooms. Furthermore, partnering/collaborating with parents and other experts who deal with these students is also important for teachers to enhance their level of confidence and preparedness in teaching students with ASD.

To further enhance teacher's capacity to educate students with ASD, it is also important for pre-service teachers and career teachers to undergo an induction program before being exposed to teaching such students. Online learning communities, networking, and linking teachers to open online resources may also assist teachers to collaborate with other teachers and share their experiences and strategies in teaching students with ASD. The recommendations for ongoing professional development arising from this research, for both PSTs and RGs about ASD-specific strategies, involving evidence-based practices (EBPs), must therefore be considered to improve teacher knowledge and skills in accommodating such students in inclusive classrooms.

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Appendices

Appendix A: Ethics Clearance

From: Human Ethics
Sent: Thursday, 17 May 2018 11:32 AM
To: Aruna Devi
Cc: Patrick Danaher; Human Ethics
Subject: USQ Ethics - Amendment Approval Notice

Dear Aruna,

Project: H17REA004 - Pre-service educator's and recent teacher graduates self-efficacy beliefs and preparedness to instruct students with Autism Spectrum Disorder in mainstream settings: An exploratory study

I am pleased to inform you that your amendment has been approved.

If you have any questions please contact the ethics office (Human.ethics@usq.edu.au)

Kind Regards,

If you have any questions or concerns, please do not hesitate to contact the Ethics Office.

Nikita Kok

Ethics Officer
Office of Research I University of Southern Queensland
Toowoomba I Queensland I 4350 I Australia
Ph: +61 7 4631 2690 I Fax: +61 7 4631 1995

Appendix B: Consent Form

University of Southern Queensland

Consent Form for USQ Research Project Interview

Project Details

Title of Project:	Pre-service educator's and recent teacher graduates self-efficacy beliefs and preparedness to instruct students with Autism Spectrum Disorder in mainstream settings: An exploratory study
Human Research Ethics Approval Number:	H17REA004

Research Team Contact Details

Principal Investigator Details

Aruna Devi
Email: aruna.devi@usq.edu.au
Telephone: (07) 38126062
Mobile: 0402701729

Other Investigator/Supervisor Details

Professor Patrick Danaher
Email: Patrick. Danaher@usq.edu.au
Telephone: (07) 4631 1190

Dr Rahul Ganguly
Email: Rahul.Ganguly@usq.edu.au
Telephone: (07) 4631 1932

Statement of Consent

By signing below, you are indicating that you:

- Have read and understood the information document regarding this project.

- Have had any questions answered to your satisfaction.

- Understand that if you have any additional questions you can contact the research team.

- Understand that the interview will be audio taped.

- Understand that I will be provided with a copy of the transcript of the interview for my perusal and endorsement prior to inclusion of this data in the project.

- Understand that you are free to withdraw at any time, without comment or penalty.

- Understand that you can contact the University of Southern Queensland Ethics Coordinator on (07) 4631 2690 or email ethics@usq.edu.au if you do have any concern or complaint about the ethical conduct of this project.

- Are over 18 years of age

- Agree to participate in the project.

Participant Name	
Participant Signature	
Date	

Please return this sheet to a Research Team member prior to undertaking the interview.

Appendix C: Participant Information Sheet

Participant Information Sheets

FACULTY OF BUSINESS, EDUCATION, LAW AND ARTS
SCHOOL OF LINGUISTICS, ADULT AND SPECIALIST EDUCATION
Aruna Devi
Doctor of Education Candidate
PHONE +61 38126062
EMAIL aruna.devi@usq.edu.au

31 July 2019

Dear Educator,

Re: Pre-service educator's and recent teacher graduates self-efficacy beliefs and preparedness to instruct students with Autism Spectrum Disorder in mainstream settings: An exploratory study

My name is Aruna Devi and I am a Doctor of Education student at University of Southern Queensland, Australia. I would like to invite you to participate in a research which will study your self-efficacy and preparedness to educate students with Autism Spectrum Disorder (ASD).

The main purpose of this study is to explore educators' self-efficacy beliefs and preparedness in educating students with ASD in mainstream classrooms. Various factors contributing to educators' preparedness to help meet the needs of students with ASD will be explored, such as educators' level of academics and behavioural characteristics and evidence-based practices for students with ASD. Sharing your knowledge, skills and experience in teaching students with ASD in mainstream classrooms will make a significant contribution to the field of educational research.

As a participant of this study, you are invited to participate in an interview; Interview will take about 30 minutes.

Your participation in this study is voluntary. If you feel uncomfortable at any point of this study, you may choose to decline to participate without any penalty. Also, you participation and non-participation in this study will not affect your future or current relationship with your institution or your lecturer. Risks in participating are considered minimal.

This study will adhere to strict confidentiality and anonymity and has been approved by USQ ethics committee. Your name will not be not disclosed. All data collected will be password protected and will only be used for this investigation. The findings will be complied in a thesis and for journal publications. All data will be destroyed after 5 years.

If you are willing to participate in this study, please sign the consent form attached and email to me, so we can arrange a convenient time for a phone interview.

Yours sincerely,
Aruna Devi

Appendix D: Permission from the Head of School

Stephen Winn   ↩ Reply all | ⌄
Mon 07-August-2017, 9:10 AM
Aruna Devi; +6 more ⌄

Inbox

| You forwarded this message on 30-July-2019 2:06 PM

Dear Aruna,

I give you permission to recruit participants to your study. However I remind you that no USQ student is under any requirement to participate in any study.

I suggest you contact Melissa Fanshawe or Christopher Dann to place the request on the Education Community site. If you require further direct reach you may wish to seek the support of Tracey Chamlin the Special Education Coordinator.

Kind regards

Stephen
Professor Stephen Winn (PhD)   ▮   0 of 0 ▲ ▾

Head of School
School of Teacher Education and Early Childhood | Faculty of Business, Education, Law and Arts | University of Southern Queensland
Toowoomba & Springfield | Queensland | 4350| Australia

Adjunct Professor School of Rural Medicine, Joint Medical Program
University of New England Australia

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UNIVERSITY
OF SOUTHERN
QUEENSLAND

Appendix E: Permission from Alumni

Sudha Soma
Tue 10-April-2018, 9:50 AM

Dear Aruna,

Many thanks for contacting us with regards to your alumni data requirements. We could certainly assist you with great pleasure.

In order to provide you with the required data; may I please request you to specify and confirm on the further criteria of the suitable alumni to call for the interviews of the volunteer positions.

Within Bachelor of Education are you chasing alumni who graduated with specific majors or any major in this program?

Recent graduates: which graduation years would you want to include, please ? **Note:** 2018 April graduands are not yet registered in the alumni database, this group of graduates will be available post their graduation ceremonies which is anticipated to be the first week of May 2018.

- Location of alumni, e.g. Alumni living in and contactable by email from Toowoomba, Brisbane, Ipswich and surrounds.

- By what timelines would you like this data to be send to you?

- From the given alumni list would you contact all alumni on the list calling for interviews or few random alumni on the list (if so what is the attribute to shortlist random alumni) ?

- Should your request of the data is to send a mass communication to all alumni on the list, our Office has to send the required communication from our database; providing your contact details in the email for interested alumni to contact you directly within the timelines.

  Please confirm these details, and based on your responses; our team could assist you with the required data or in sending the communication to the specified alumni.

Thank you for taking time to read my email, and thank you in advance for your response.

I look forward to hearing from you soon !

Best wishes,
Sudha

Sudha Soma
Alumni Relations Officer
Alumni Relations Office | Students & Communities Division | University of Southern Queensland
Toowoomba | Queensland | 4350 | Australia

Direct: +61 7 4687 5708
E-mail: sudha.soma@usq.edu.au

Appendix F: Interview Questions

1. Can you please tell me whether you have worked with students with ASD in your classrooms?

2. How would you describe about your experiences in teaching students with ASD?

3. How do you feel about teaching students with ASD in your classroom?

4. Did you take any special education courses, and how did it help you in teaching students with ASD?

5. How would you describe your knowledge base in understanding the characteristics displayed by individuals with ASD?

6.   What does inclusion education mean to you?

7. What is your view about successful inclusion of students with ASD?

8. Recalling from your teacher training programs, can you tell me whether your learned about evidence-based practices for students with ASD.

9. What courses or professional developments has assisted in building your capacity in implementing evidence-based practices in teaching students with ASD.

10. How comfortable are you in addressing the academic needs of students with ASD?

11. How comfortable are you in addressing the social needs of students with ASD?

12. How comfortable are you in addressing the behavioural needs of students with ASD?

13. How do you feel about you teacher preparation for inclusion of students with ASD?

14. Was there anything that was not addressed during your teacher training and you feel it should have been addressed.

15. How would you explain you overall self-efficacy and preparedness in teaching students with ASD in mainstream classrooms?

16. Thank you for your valuable information and time. Is there anything else you would like to add before we end the interview?

Appendix G: Survey Questions

My name is Aruna Devi and I am a Doctor of Education candidate at the University of Southern Queensland. I would like to invite you to participate in a research project studying self-efficacy and preparedness for educating students with Autism Spectrum Disorder (ASD).

The purpose of this study is to explore pre-service educators' perceived self-efficacy beliefs and preparedness in educating students with ASD in inclusive classrooms with respect to classroom management, engagement, and instructional strategies. Factors contributing to pre-service educators' preparedness to help to meet the needs of students with ASD will be explored, such as the educators' knowledge of characteristics and evidence-based practices. Sharing your knowledge, skills, and experience in teaching students with ASD in inclusive classrooms will make a significant contribution to educational research in relation to educating students with ASD.

If you are interested in participating in an interview, please indicate this in the last section of the survey with your details.

Participation

Your participation will involve the completion of a questionnaire that will take approximately 30 minutes.

Your participation in this project is entirely voluntary. If you do not wish to take part, you are not obliged to do so. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. Please note that, if you wish to withdraw from the project after you have submitted your responses, the Research Team will be unable to remove your data from the project. If you do wish to withdraw from this project, please contact the Research Team.

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

Expected Benefits

It is expected that this project will directly benefit you by enabling you to reflect on and analyse your teaching practices and skills. It will assist you in identifying any areas of potential development in teaching students with ASD through ongoing professional education. It will benefit the institution in potentially modifying their curriculum for preparing effective teachers.

Risks

Sometimes thinking about the sorts of issues raised in the questionnaire can create some uncomfortable or distressing feelings. If you need to talk to someone about this, please contact the University of Southern Queensland Student Services and/or the Research Team.

All comments and responses will be treated confidentially unless required to be shared by law. The names of individual persons are not required in any of the responses. Any data collected as a part of this project will be stored securely as per the University of Southern Queensland's Research Data Management policy.

Questions or Further Information about the Project

Please refer to the Research Team Contact Details at the bottom 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 project, you may contact the University of Southern Queensland Ethics Coordinator on (07) 4631 2690 or email ethics@usq.edu.au. The Ethics Coordinator 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.

Supervisor details:

Professor Patrick Danaher: Patrick.Danaher@usq.edu.au

Dr Rahul Ganguly: Rahul.Ganguly@usq.edu.au

If you have any questions about the study please contact Aruna Devi on 07 38078861 or email aruna.devi@usq.edu.au, w0080808@usq.edu.au. For technical concerns or difficulties accessing the survey please contact Ken Askin, University of Southern Queensland, at askin@usq.edu.au.

I declare that I am:

- at least 16 years of age AND a USQ student

☐ **Click here to agree**

THANK YOU FOR YOUR PARTICIPATION

To start the survey please click on the 'Next' button below.