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Teacher Expectations for Children with Autism Spectrum Disorder

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Abstract

The current study explored teacher expectations for children with autism spectrum disorder (ASD). Mixed methodology was adopted in this research to investigate teachers' expectations for ASD children, and relevant factors including teachers' knowledge about autism, implicit beliefs about autism teaching, teachers' self-efficacy in working with students with ASD, and teachers' instructional behaviour. These aspects were explored in four studies.

Study One investigated teachers' professional knowledge about autism. Teachers possessed some accurate knowledge and harboured some misconceptions about autism. Teachers' autism-specific knowledge related to the teachers' role, the teachers' working experience with ASD students, and the teachers' gender.

Study Two explored the academic expectations and social expectations that teachers held for individual students with ASD. Teachers held a diverse range of expectations for their ASD students. Three groups of teachers (L2, L1, and LS) were identified based on the number of levels that teachers predicted students would gain in reading. L2 indicated that teachers believed that their ASD students would improve two levels, L1 one level, and LS that there would be no improvement; students would remain at the same level.

In Study Three, the different groups of teachers were interviewed with regard to their beliefs about how learning should be delivered to children with ASD, and their self-efficacy in teaching ASD children. Teachers who expected greater progress in student reading achievement (L1 and L2 group teachers) held more favourable beliefs about ASD students and appeared to have higher self-efficacy than their counterparts who expected less improvement in the students' reading (LS group teachers). Teachers from the L1 and L2

group were more likely to report providing more learning opportunities to ASD students than their counterparts from the LS group.

Study Four observed and compared the verbal behaviours of the different groups of teachers. It was found that the L1 group teachers behaved more similarly to the L2 group teachers than did the LS group teachers. L1 and L2 group teachers spent more effort on teaching a concept and spent less effort on behavioural management than their LS group counterparts. They provided more feedback and spent more time explaining concepts to their ASD students. Those differences appeared to show that the learning opportunities provided by L1 and L2 group teachers were different from those provided by LS group teachers.

The findings indicated that teachers' autism-specific knowledge, teacher beliefs about and self-efficacy in teaching children with ASD, and teachers' verbal behaviours appeared to relate to the formation of teacher expectations for ASD students.

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Table of Contents

List of Tables

List of Figures

Chapter One

Introduction

Research about teacher expectations has been widespread since the Pygmalion experiment of Rosenthal and Jacobson (1968). Following the original experimental study, there have been hundreds of studies related to teacher expectations and their effect on student learning. These studies have generated fruitful findings and consensus regarding the direct impact that teacher expectations have on student learning (e.g., Good & Brophy, 2008; Rosenthal & Jacobson, 1968; Rubie-Davies, 2014). Whereas the majority of relevant literature has focused on teacher expectations for typically developing students (e.g. Babad et al., 1982; de Boer, Bosker, & van der Werf, 2010;Rubie-Davies, 2008), the research related to teacher expectations for children with autism spectrum disorder (ASD) is very limited in number.

Autism spectrum disorder is a developmental disability characterised by impairments in communication, social behaviour, and thinking and behaving flexibly (American Psychiatric Association, 2013). The Centre for Disease Control and Prevention in the United States revealed that one out of every 68 children in the United States was estimated as having ASD (Centers for Disease Control and Prevention, 2015). The estimation of the prevalence of people with ASD in the United Kingdom (The National Autistic Society, 2016) and New Zealand (Ministry of Health, 2016) was around 1:100. Considering the numbers of children being diagnosed and the unique core characteristics of autism, as listed above, it is apparent that students with ASD are likely to pose significant educational challenges.

In order to serve and meet ASD students' needs appropriately, it is likely that more frequent and direct interactions between teachers and ASD students are required, in comparison to teachers and non-ASD students (Conn, 2014). It is assumed that teacher

expectations may be more salient to these students in such frequent one-to-one interactions. Given that teacher expectations directly relate to student learning (Good & Brophy, 2008; Li, 2014; Rubie-Davies, 2014), exploring teacher expectations for ASD students may help us understand the possible relations between teacher expectations and the learning of ASD students, and to identify factors influencing teacher expectations for these students. Findings from this research may, in turn, provide information useful for the development of targeted professional programmes to help teachers become high expectation teachers when teaching students with ASD.

Teacher Expectations for Children with Autism Spectrum Disorder

To the author's knowledge, only two studies have explored teacher expectation for students with ASD. However, neither study has conducted intensive examinations. Ivey (2007) investigated 15 teachers and their expectations for ASD students' future outcomes in terms of the importance and likelihood of achieving particular outcomes, such as continuing study. The research found that teachers held statistically significant different expectations between the likelihood and importance for eight areas, such as friendships, independent living, and holding a job. Teachers reported that their students may have some difficulties in achieving some outcomes that they believed were important for ASD students (Ivey, 2007). More recently, Witmer and Ferreri (2014) examined teachers' expectations for children with ASD as a part of their research about alignment of instruction, expectations, and accountability testing for ASD students. Participants comprised 191 teachers and their 191 ASD students with a wide range of grade levels (from elementary to high school). These teachers were asked to report broad academic expectations for their students in terms of grade-level achievement and the focus was not subject-specific. The research showed that teachers' expectations varied by students' grade level and the teacher themselves. For example, nearly two-thirds of teachers expected their ASD students to achieve some goals

while the rest of them did not have specific expectations for their students (Witmer & Ferreri, 2014).

Both the studies reviewed above provided informative knowledge for the literature about teacher expectations for children with ASD; however, answers to far more basic questions regarding this field remain unknown. These questions—such as, what expectations do teachers hold for students with ASD, how do teachers form their expectations for individual ASD students, and in what ways do teachers communicate their expectations for these students—are worth exploring. Given the number of students being diagnosed with ASD, it is the right time to examine these questions. In addition, since students with ASD have equal rights to study in special schools and mainstream schools (Ministry of Education, 2013), this means that they could study in different school and classroom contexts. Whereas mainstream school refers to the regular school environment where students with ASD study in general classrooms with their peers without special needs, special school refers to the special school environment where students with ASD study in self-contained programmes with their peers with special needs (Albrecht, 2005). In order to better understand the questions mentioned above, it would be helpful to explore teacher expectations for students with ASD from the perspective of teachers who work with students with ASD in different settings (or different types of schools), that is, general education teachers and special education teachers.

Teachers' Academic and Social Expectations

Teachers have both academic and social expectations (Dusek & Joseph, 1983; Tenenbaum & Ruck, 2007) for their students. Most of the literature has explored teachers' academic expectations. These studies have generally proposed that teachers' high expectations closely relate to improving student academic achievement (Good & Brophy,

1997; Good, 1987), while teachers' low expectations are associated with less optimal progress in student learning (Rubie-Davies, 2008), no matter whether students are developing typically or have special needs. Furthermore, previous studies have shown that teachers tended to hold low academic expectations for students with special needs, such as students with learning disabilities (Osterholm, Nash, & Kritsonis, 2007) and students with attention deficit hyperactivity disorder (Woodcock & Vialle, 2011). Teachers' low expectations could, in turn, influence children's learning adversely (Algozzine, Mercer, & Countermine, 1977; Koonce et al., 2004).

In contrast, limited information is available regarding teachers' social expectations. This may be partly because most typically developing students are able to acquire social skills without specific training (Scott, Clark, & Brady, 2000), and this may be partly because there is insufficient research regarding teacher expectations for children with special needs in terms of their social development. The relevant research has mainly focused on what core social behaviours teachers expected their students to have for school success (Lane, Wehby, & Cooley, 2006; Lane, Stanton-Chapman, Jamison, & Phillips, 2007; Van Horn, Tamase, & Hagiwara, 2001), while teachers' social expectations for individual students has been neglected by the teacher expectation field. Considering that social impairment is one of the core characteristics of students with ASD and individual ASD students vary one from another, exploring teachers' social expectations for individual students with ASD seems to be imperative. It is assumed that teachers' social expectations may play a role in influencing what learning opportunities teachers provide to improve the social skills of ASD students, and also in influencing the ways in which they teach social skills to those students, which, in turn, can influence the social development of individual students.

Teacher-related Factors Influencing Teacher Expectations

A large body of research has shown that some student-related factors such as student socioeconomic background (e.g., Channouf, Mangard, Baudry, & Perney, 2005; Speybroeck et al., 2012) and student prior achievement (e.g., Hinnant, O'Brien, & Ghazarian, 2009; Jussim, Eccles, & Madon, 1996) are related to the formation of teacher expectations and relevant expectancy effects. However, compared with student-related factors, several recent teacher expectancy studies have proposed that teacher-related factors (such as teacher behaviour and teacher beliefs) can play a more crucial role in influencing teacher expectations and their effects (e.g., Li, 2014; Rubie-Davies, 2008, 2014; Weinstein, 2002). Much more work regarding teacher-related factors that influence teacher expectations is needed.

A number of studies have focused on the role of teacher behaviours in influencing teacher expectations and suggested that teacher behaviours are a mechanism of teacher expectations (Brophy & Good, 1970; Cooper, 1985; Rubie-Davies, 2007). The researchers proposed that teachers would behave differently towards students for whom they held high expectations compared to those for whom they held low expectations, and consequently, students may achieve differently. However, these studies all focused on how teachers' differential expectations are transmitted to typically developing students through their differential behaviours. Questions such as whether and how teachers would interact with their individual ASD students for whom they hold specific expectations await exploration.

A small number of previous studies have shown that teacher beliefs about how learning should be delivered to students play a significant role in moderating teacher expectation effects (Li, 2014; Rubie-Davies, 2008, 2014). Teacher beliefs about students' abilities for learning, about planning for instruction (including specific instructional methods

they used and learning materials or resources they selected for students), alongside teacher expectations, resulted in different learning opportunities for students. These different learning opportunities "may then add additional weight to the differential expectations that teachers have for individual students" (Rubie-Davies, 2014, p. 35). However, these studies all focused on teacher beliefs and expectations for typically developing students. To date, no work has specifically targeted the relationship between teacher expectations for students with ASD and teacher beliefs about teaching children with ASD. Likewise, although existing research has shown that teachers' self-efficacy may vary in accordance with teacher expectations for students (Good & Brophy, 2008; Li, 2014; Ross, 1998), the question of whether there is a relation between teacher self-efficacy in teaching ASD students and teacher expectations for ASD students is unknown.

Teachers' knowledge about particular groups of students may also influence teacher expectations for these students (Rubie-Davies, 2014). There is a paucity of research on the relations between teachers' autism-specific knowledge and teacher expectations for ASD students. Although there have been studies exploring teachers' autism-specific knowledge, they mainly focused on examining teacher knowledge based on teachers' characteristics such as the teacher's role. One study pointed out that teacher knowledge about autism may relate to teacher expectations for these students, but this study did not closely examine the relations between teacher expectations and teacher knowledge (Helps, Newsom-Davis, & Callias, 1999). More evidence related to these ideas is needed.

Purpose of the Research

There are four propositions in the current research. The first proposition is that teachers may vary in their autism-specific knowledge which will be the basis of teacher expectations for children with ASD. Teachers' demographic characteristics such as teachers' experience of working with ASD students may play a role in influencing teacher knowledge

about autism. No empirical studies have been conducted to examine the possible relations between teachers' demographic characteristics and teachers' knowledge about autism in the New Zealand context. Furthermore, there is no empirical research that has explored the relations between teachers' autism-specific knowledge and teacher expectations for ASD students in New Zealand.

The second proposition is that teachers will have both academic expectations and social expectations for individual students with ASD and those two types of expectations may relate to each other. The claim is that teachers have varying expectations for different students with ASD, and some teachers may have higher expectations for their ASD students than others. This proposition has yet to be explored by empirical research but given that it has been found that teachers held varying expectations for individual typically developing students and students with other special needs such as learning disabilities (e.g., Clark, 1997; de Boer et al., 2010; Rosenthal & Jacobson, 1968), it is anticipated that different teacher academic and social expectations will be found.

The third proposition of this thesis is that teachers' beliefs about autism teaching and teachers' self-efficacy in teaching children with ASD would vary in accordance with their expectations for ASD students. That is to say, teachers having different expectations for students with ASD may differ in their beliefs and self-efficacy, and those different beliefs may result in different learning opportunities that they provide to students with ASD. Again, this proposition has not yet been tested, and, hence, the current investigation will attempt to explore these possible relations.

The final proposition of this thesis is that the instructional behaviours of teachers would differ based on their different expectations for individual students. The claim is that teacher expectations could be transmitted to students through teachers' verbal behaviours in

the classroom. Teachers' verbal behaviours towards individual ASD students in the classroom have not been explored in teacher expectancy research. Hence, an attempt will be made to determine any differences in the behaviours of teachers with different expectations for their individual ASD students.

Significance of the Research

The current research is, to the author's knowledge, the first research that intends to deeply explore teacher expectations for children with ASD from the perspective of both general education and special education teachers. Among hundreds of previous teacher expectancy studies, only two studies have attempted to investigate teacher expectations for ASD children (Ivey, 2007; Witmer & Ferreri, 2014). Furthermore, it appears that there is little comprehensive research, similar to the current research, investigating teacher expectations for children with other special needs. Previous studies have mainly revealed what expectations teachers held for children with special needs, without interpreting how teacher expectations might influence children with special needs (e.g. Arluke & Smith, 1982; Dunn, 1968; Levin, McMullen, Shippen, & Dangel, 2007). Therefore, to some extent, the current study is the first attempt to deeply understand the relations between teacher expectations and children with special needs, specifically children with ASD.

Secondly, the investigation of teachers' academic expectations and social expectations for children with ASD would be important in two ways. For one thing, as noted previously, teachers have been found to be more likely to have low academic expectations for students with special needs, and students with ASD are more likely to be judged as having low academic achievement than typically developing students (Ashburner, Ziviani, & Rodger, 2010). Investigating teachers' academic expectations for ASD students may not only extend the teacher expectancy field, but also contribute to the understanding of possible reasons for the academic under-performance of ASD students. For another, although a large volume of

8

research on autism has paid attention to the accompanying social impairments (Wilkinson, Best, Minshew, & Strauss, 2010), no studies have explored teacher expectations for individual students in their social development. Exploring teachers' social expectations for ASD children may increase our understanding of a different dimension of teacher expectations, and could have implications for enhancing the social development of ASD students.

Thirdly, this research aims to broadly examine teacher knowledge of autism from the perspective of a large number of teachers in New Zealand. Because there is little, if any, research exploring this issue in New Zealand, the findings may help researchers gain a general perception of the situation with regard to the level of knowledge of autism that teachers hold in New Zealand. It may also add weight to the argument that teacher knowledge of autism may relate to teacher expectations for students with ASD.

Fourthly, the identification of teachers' behaviours that are in accordance with their specific expectations for individual students with ASD could have implications for autism teaching. Previous research has shown that teacher behaviours are significant indicators of teacher expectations when teachers work with typically developing students (Brophy & Good, 1970; Harris & Rosenthal, 1985; Kuklinski & Weinstein, 2001), but little is known regarding children with ASD. The findings of the current research may provide new evidence of the relations between teacher expectations and teacher behaviours, even for students with ASD.

Furthermore, the current research endeavours to probe the relations between teacher expectations and teacher beliefs. As mentioned before, there is little research demonstrating the role of teacher beliefs in the teacher expectation process (Rubie-Davies, 2008). This research may expand existing findings in this field and contribute to a deeper understanding

in the process of exploring teacher beliefs about teaching and learning, and teachers' self-efficacy.

Finally, both general education teachers and special education teachers are the targets of the current study. Whereas the existing relevant studies have mostly focused on teacher attitudes towards including students with ASD in mainstream schools (McGregor & Campbell, 2001), there is no study that has explored teacher expectations for ASD students from the perspective of both special education teachers and general education teachers. The findings of this research may contribute to an understanding of the similarities and differences between special education teachers and general education teachers in terms of their expectations for ASD students, their beliefs about autism teaching, their behaviour towards ASD students and their knowledge of autism.

Design of the Research

The current research was approved by the University of Auckland Human Subjects Ethics Committee (reference number: 011600) which complies with a strict code of ethics pertaining to the conducting of research involving human participants. Appendix A includes copies of all participant information sheets and consent forms used in this research.

This research comprised four studies. Study One was designed to investigate teachers' autism-specific knowledge across a wide range of teachers. This study aimed to gain a general understanding of what knowledge teachers had regarding autism, and the possible relations between teachers' characteristics (e.g., teachers' role, teachers' working experience with students with ASD, and teachers' gender) and teachers' autism-specific knowledge.

Study Two used a survey to investigate teachers' academic expectations and social expectations for individual students with ASD. It attempted to firstly describe the social

expectations and academic expectations that teachers held for ASD students, and also to identify if some teachers held higher academic and/or social expectations than others. The findings formed the basis of the later studies. The possible relationship between teachers' academic and social expectations was also examined.

Study Three explored teachers' beliefs about how learning should be delivered to students with ASD and teachers' self-efficacy in working with ASD students by using structured interviews. The beliefs of teachers who were identified as having different expectations for their ASD students in Study Two were analysed and compared. This study also attempted to provide a full picture of the beliefs teachers held regarding autism teaching.

Study Four was designed to investigate the classroom interactions of teachers who held specific expectations for ASD students identified in Study Two. Teachers' verbal behaviours towards ASD students were observed and analysed in an attempt to unravel the possible relations between teacher expectations and teacher behaviours.

The following chapter (Chapter Two) provides a critical review related to the field of teacher expectations and its relevant factors. Firstly, the definition of teacher expectations and its related factors is presented. This is followed by a brief history of teacher expectancy research and theoretical models of teacher expectations. The literature review then discusses the student-related factors and teacher-related factors that influence teacher expectations. The next section of the literature review includes a brief discussion about children with ASD, especially in terms of the definition and prevalence of children with ASD and their social impairment. Following that section is a discussion of teacher knowledge of children with ASD, teacher behaviours towards, and teacher beliefs about, students with ASD. The final section of the literature review considers research about teacher expectations for children with ASD.

The subsequent four chapters (Chapter Three to Six) present each of the four studies that comprise this research. The final chapter (Chapter Seven) presents a discussion of the research findings of the four studies, the implications of the findings for practice, the study limitations, and directions for future research, and ends with a conclusion related to the whole research project and the findings.

Chapter Two

Literature Review

Teacher Expectations and Definitions

Teacher expectations can be defined as teachers' notions about the current and future academic performance and classroom behaviour of their students, based upon teachers' understanding of available information about their students. These expectations can be evident at the individual, group, and class level (Rubie-Davies, 2014). When teachers have different expectations for their individual students, particular groups of students, or multiple classes, the expectations can positively or negatively influence student learning (e.g., Babad, 1993; Cooper & Good, 1983; Jussim, Smith, Madon, & Palumbo, 1998; Li, 2014) in several ways. Teacher expectations may be conveyed to students by the ways in which different opportunities are planned and provided to students (Rubie-Davies, 2008, 2014). They may also be transmitted to students through teachers' verbal and non-verbal behaviours (Babad, Bernieri, & Rosenthal, 1989; Rubie-Davies, 2007). Further, the different learning opportunities teachers provide and the different interactions teachers conduct with students may create a variable socioemotional environment in the classroom depending on teacher practices (Kuklinski & Weinstein, 2001). Studying with teachers with differential expectations, students may have different learning outcomes because their learning mainly depends on the learning opportunities provided by their teachers (Peterson, Rubie-Davies, Osborne, & Sibley, 2016), the interactions with their teachers, and the socioemotional environment created by their teachers.

Teachers' academic expectations and social expectations. Teacher expectations may have different dimensions. For example, Dusek and Joseph (1983) divided teacher expectations into two parts: academic expectations and social expectations. They defined academic expectations as "teacher perceptions of performance, achievement, ability, level of

educational attainment, and the like" while defining social expectations as "teacher perceptions of general social development, peer relations, relations with adults, and personality attributions" (Dusek & Joseph, 1983, p. 329). Likewise, Tenenbaum and Ruck (2007) claimed that most articles exploring teachers' expectations could be classified into two kinds: academic expectations and social expectations. Specifically, academic expectations include "estimates of students' intelligence, writing ability, or future/potential academic success" while social expectations are for "behaviour, friendliness, or politeness" (Tenenbaum & Ruck, 2007, p. 259). In the current study, the dimensions of teacher expectations developed by Dusek and Joseph will be employed, that is, both academic and social expectations will be investigated.

As mentioned previously, whereas there is considerable research focusing on teacher expectations for students' academic achievement (which will be discussed later), research regarding teacher expectations for students' social development is sparse. The limited relevant research has explored the expected social behaviours (skills) for different grades (e.g., Lane, Givner, & Pierson, 2004; Lane et al., 2007; Van Horn et al., 2001). These studies are informative and provide knowledge regarding teachers' social expectations. However, they have all focused on what core social behaviours teachers expected their students to have for school success, while teacher social expectations for individual students remains largely under-researched.

Lane and colleagues (2006) for example, investigated 717 teachers (both special education teachers and general education teachers) from diverse backgrounds, working at different grade levels and in different schools. They found that the types of teachers and the grade levels they taught in could influence the teachers' judgements regarding the importance of social skills for success. For example, special education teachers in high school placed greater value on self-control skills than general education teachers in high school, while both

general and special education teachers in elementary and middle schools held similar views in terms of the importance of self-control skills. The researchers suggested that much more consistency, with subtle yet significant differences, could be found in terms of teacher expectations for students' social behaviour across the grade span and programme types (Lane, Pierson, Stang, & Carter, 2010).

> **The relations between teachers' academic expectations and social expectations.** Research exploring the relations between the two dimensions (academic and social) of teacher expectations is scarce. Teklu and Kumar (2013) used a self-developed questionnaire, namely the Teacher Expectation Scale (TES), to investigate 171 secondary school teachers' expectations for academic achievement (AA) and social skills and behaviour (SSB) of students with emotional and behavioural disorders. They found that teachers held moderately realistic expectations for their students on both aspects. Moreover, there was a significant positive correlation between teachers' expectations for students' academic achievement and their ratings of social skills and behaviours because, the researchers argued, these two variables reciprocally influenced each other (Teklu & Kumar, 2013).

In addition, evidence suggests that teachers expect all students to behave in a particular way in the classroom (Wong & Wong, 1991), even though what is expected can vary from one teacher to another. However, the ability to behave in accordance with their teachers' expectations is mainly dependent on students' social competence. Such competence not only plays a vital role in predicting teachers' expectations for student social development, it also plays a close and significant role in predicting teachers' expectations for student academic achievement (Hinnant et al., 2009), which further predicts student academic achievement. Jimenez-Morales and Lopez-Zafra (2013) found that teachers generated high expectations for students' academic achievement on the condition that the students displayed

15

a range of pro-social attitudes and social behaviours (such as managing their behaviour appropriately in the classroom). Consequently, those students achieved higher scores at the end of the course. On the other hand, students who showed antisocial attitudes and had difficulties in controlling their emotions or behaviours were more likely to have lower academic performance, partly due to their teachers' low expectations for them (Jimenez-Morales & Lopez-Zafra, 2013).

Teacher expectation effects. Teacher expectation effects refer to the students' later outcomes that happen in accordance with teacher expectations for students (Good & Brophy, 2000). There are several types of explanations with regard to teacher expectations effects, among them, the self-fulfilling prophecy, sustaining expectation effects, perceptual bias and accuracy, which will be reviewed.

Self-fulfilling prophecy. The self-fulfilling prophecy was identified as a situation where teachers held inaccurate expectations for students, interacted with students based on the erroneous expectations, and, finally, led students to behave consistently with their expectations (Brophy, 1983). For example, a teacher may hold low expectations for a particular student in reading at the beginning of the academic year, but actually the student achieves well in reading. This teacher's inaccurate expectations may lead them to interact with the particular student in accordance with their low expectations; they may provide this student with limited learning opportunities (such as giving the student few challenging tasks) and may be less likely to promote the student's thinking compared with what that teacher does for their high expectation students. Because this particular student would perceive the teacher's expectations through the interactions with their teacher, and learn what the teacher provided to them, they may have an undesirable outcome of poor achievement in reading at the end of the school year. Accordingly, the student's achievement varies with the teacher's expectations for him/her.

16

The self-fulfilling prophecy has three subtypes: Golem effects, Galatea effects (Babad et al., 1982), and sustaining expectation effects. Golem effects refer to undesirable effects on students' learning caused by low teacher expectations. Galatea effects refer to favourable impacts on students, which are the result of high teacher expectations (Babad et al., 1982). Sustaining expectation effects occur when teachers respond to their students on the basis of their previously established expectations for those students rather than on changes in student performance (Cooper & Good, 1983). It appears from the literature that although Golem and Galatea effects generate changes in student achievement, sustaining expectations effects hinder positive changes in achievement.

Perceptual bias. Another type of teacher expectations effects is perceptual bias, which is similar to the sustaining expectation effect. "Perceptual bias occurs when a perceiver's beliefs influence their evaluation of target behaviour" (Smith et al., 1998, p.531.). For example, a reading teacher may believe that a particular student is especially talented in writing. If the teacher gives this student more favourable evaluations than other students for similar achievement in writing, perceptual bias has occurred.

Accuracy. It is also possible that teachers' predictions of students' performance correspond to student later outcomes, because the original expectations are accurate (Jussim, 1991; Smith et al., 1998). Jussim and colleagues (1998) divided accuracy into two types: impression accuracy and predictive accuracy. The former refers to the degree to which teachers utilise reliable information to form their expectations, whereas the latter refers to the extent to which teacher expectations predict student outcomes without causing them (Jussim, Smith, Madon, & Palumbo, 1998).

A Brief History of Teacher Expectancy Research

In this section, the Pygmalion experiment—the seminal work from the teacher expectations field—will be presented and discussed, followed by a brief outline of the relevant literature that followed the initial Pygmalion study.

Pygmalion experiment. Rosenthal and Jacobson conducted an experiment in Oak School in 1968. A little-known, intelligence quotient (IQ) test, Test of General Ability (TOGA), was dressed up as the Harvard Test of Inflected Acquisition and administered to all students in the school four times (before the experiment, eight months, one year, and two years after the experiment began). After the pre-test, teachers were induced to consider some students (20%) as "late bloomers" which meant those students would make great progress by the end of the year. Actually, however, they were randomly selected. One year later, the students who were identified as late bloomers had made more substantial intellectual gains than their peers who were not identified as late bloomers. They also showed overall greater gains in reading than their peers in the control group. The research showed the self-fulfilling prophecy effects of teacher expectations, whereby teachers' initially inaccurate expectations were confirmed by teacher expectation effects (Rosenthal & Jacobson, 1968).

The Pygmalion experiment has sparked extreme controversy in research. Some academics were enthusiastic about the findings of the research and they advocated that this study could be regarded as the key to reducing educational and social inequalities (see Spitz, 1999; Wineburg, 1987 for reviews). Some enthusiasts claimed that the self-fulfilling prophecy not only existed in the school setting, but also existed in other workplaces, which may have accounted for further inequalities in society (Jussim & Harber, 2005; Wineburg, 1987). Furthermore, this study was even cited in some newspapers and textbooks in adding to the exaggeration of the influences of teachers' high expectations on student achievement. It was also cited in several American courts in order to get more equal education rights for

students. One state, for example, prohibited the use of intelligence tests to identify students with special education needs in special education classes as a result of the Pygmalion experiment (Spitz, 1999).

Those claimants, however, misinterpreted or exaggerated the positive effects of the Pygmalion experiment. For instance, only the manipulation of positive expectations was examined in the study, whereas possible effects of negative expectations that teachers held were not explored. In addition, the authors did not take racial or socially-related factors into account in the experiment. Moreover, some enthusiasts exaggerated the effects of the Pygmalion study by reporting that they were more powerful than that reported by Rosenthal and Jacobson.

Although some researchers advocated for the Pygmalion study, however, others criticised it, especially the academics from the field of educational psychology (see Spitz, 1999 for a review). Among them, three studies were notable. Thorndike (1969) initiated the unfavourable critical reviews. He questioned the validity of the TOGA test and the testing procedure. He pointed out that the high IQ score of six "late bloomers" in the post test and the overall low IQ scores of students beginning first grade may have influenced the overall test results, which appeared empirically unlikely (Thorndike, 1969). Likewise, Snow and his colleagues produced two critical reviews in which the measurement and data analysis of the Pygmalion study were questioned strongly (Elashoff & Snow, 1971; Snow, 1969). Firstly, the measurement of the TOGA was regarded as "does not have adequate norms for the youngest children, especially for children from lower socioeconomic backgrounds" (Snow, 1969, p. 198). In the latter research, Elashoff and Snow (1971) further remarked that the interpretation of the Pygmalion study was misleading because the significant differences only

existed in the first and second grades rather than the whole experimental group (Elashoff & Snow, 1971).

In addition, some studies focused on different flaws in the Pygmalion experiment. Some researchers questioned whether the study simply equated IQ scores with intelligence growth and academic ability (Elashoff & Snow, 1971; Spitz, 1999). Some studies pointed out that the study lacked evidence in how teacher expectations were transmitted to students (Brophy & Good, 1974). Other researchers were concerned that the experimental research of Pygmalion could not apply to natural classroom settings (Dusek & Joseph, 1985).

Although there were many critics of the Pygmalion study, experimental studies supported the existence and the effect of the self-fulfilling prophecy (Brophy & Good, 1974; Rosenthal & Rubin, 1978). In addition, even though the question of whether teacher expectations can influence student IQ is still unresolved, it became widely accepted that teacher expectations did have effects on students' other school performance (Rubie-Davies, 2008; Snow, 1995; Thorndike, 1969). Furthermore, no matter how researchers interpreted the Pygmalion study, it was acknowledged that the Pygmalion experiment had launched a new research area in the educational and psychological field, and it generated hundreds of studies regarding teacher expectations and their effects.

Teacher expectations literature after the Pygmalion experiment. As mentioned above, a large number of studies took place regarding teacher expectations and their effects following the Pygmalion study. Those studies used three different approaches to explore teacher expectations: some research was conducted in an experimental setting; some was conducted by using meta-analyses; and some research was conducted in the schools and classroom in the natural setting. Considering a large body of research has focused on teacher expectations in the natural setting, the relevant research is reviewed in a separate section.

Therefore, the experimental and meta-analytic studies will be briefly discussed in the following sections while the studies conducting in the natural setting will be reviewed in the later section.

Following the Pygmalion experiment, some researchers attempted to replicate the initial experimental study to identify the effects of teacher expectations on students (Claiborn, 1969; Jose & Cody, 1971). Those studies were conducted at the end of the 1960s and early 1970s. Jose and Cody (1971) replicated the original experiment to explore the impacts of teacher expectation on student IQ, achievement, grades, and behaviour. They found few differences in these variables between the control group and experimental group. At the same time, Rosenthal and his colleagues conducted three different studies to replicate the Oak School experiment. Those studies all found differing results in IQ score with re-testing, but did not find statistically significant differences between the experimental and control groups (Anderson & Rosenthal, 1968; Conn, Edwards, Rosenthal, & Crowne, 1968; Evans & Rosenthal, 1969). It is worth noting that there have been no experimental studies since that time.

There are a few studies that have explored teacher expectations and effects by using quasi-experimental design. Weinstein and colleagues (1991) used both qualitative and quasi-experimental methods to examine the impact of collaborative intervention on raising expectations for at-risk students who were at ninth grade. The researchers worked with seven teachers in a school to improve the school and classroom environment for 158 at-risk students. The research also included 154 students in the comparison group. The results showed that project students made greater improvements in English and history than comparable students who were not involved in the intervention during the year. Meanwhile, more project students than comparison students still studied at the same school and they were

less likely to be in a continuation programme or to withdraw from school in one year. However, unfortunately, the study found that project students did not have better performance than comparison students in terms of achievement and attendance when they did not studied with the teachers in the intervention project one year later. The authors attributed the undesirable performance of project students to the methodological constraint and the incomplete programme effects (Weinstein et al., 1991).

More recently, Rubie-Davies, Peterson, Sibley, and Rosenthal (2015) developed an intervention programme to help in-service teachers improve their teaching practice through reflection of high expectation teachers. They randomly assigned 84 teachers in Auckland, New Zealand into either intervention or control groups. Accordingly, 1241 and 1167 students were in the classes of intervention or control group teachers, respectively. The teachers in the intervention group attended four workshops in which the relevant research regarding high expectation teachers (such as the instructional strategies high expectation teachers used) were presented. Those teachers in the intervention group were also required to make teaching plans and reflect their own teaching practice based on the practice of high expectation teachers in the workshops. After the workshops, the researchers visited the intervention group teachers three times at those teachers' school for the purpose of discussing teachers' successes or difficulties in implementing the intervention strategies, and providing the relevant support to teachers (Rubie-Davies, Peterson, Sibley, & Rosenthal, 2015).

After the intervention, students' achievement in mathematics and reading were analysed and compared by teacher group. Research found that students of intervention group teachers made a greater achievement in mathematics than their peers of control group teachers. However, intervention did not predict students' reading achievement to any statistical significance. The different relations between intervention and reading, and mathematics might be due to the degree to which teachers had implemented their practice in

reading and mathematics. For example, whereas 63% of teachers had integrated flexible grouping into mathematics, only 22% of teachers had implemented flexible grouping into reading programmes. This study highlighted that teachers' high expectations and teachers' relevant behaviours would be beneficial for student learning (Rubie-Davies et al., 2015).

Some research explored teacher expectations and its effects by conducting meta-analyses. Among the researchers, some focused on reviewing experimental studies related to teacher expectations (Raudenbush, 1984; Rosenthal & Rubin, 1978; Spitz, 1999) while others reviewed both experimental and naturalistic studies (Hattie, 2009; Jussim & Harber, 2005; Jussim, Robustelli, & Cain, 2009; Smith, 1980). Rosenthal and Rubin (1978), for example, included 354 studies regarding expectation effects. They divided the 354 studies into eight groups (such as animal learning, reaction time, and learning and ability) and calculated the effect sizes for all studies for each group. The results showed that the estimated grand mean effect size of studies related to learning and ability, and studies across the eight groups was .54 and .70, respectively. The authors further concluded that self-fulfilling prophecies do exist and the "mean size of the effect is clearly not trivial" (Rosenthal & Rubin 1978, p. 385).

Raudenbush (1984) examined the effects of teacher expectations on student IQ by reviewing 18 experimental studies. He found that teacher expectations effects on student IQ were moderated by the time of year teacher expectations were investigated. Specifically, expectation effects were more powerful in the condition that teachers had not had contact with their students ($d = 0.32$) than when teachers had two or more weeks of interaction with their students ($d = - 0.04$). Later, Spitz (1999) reviewed 19 experimental studies that investigated the possible relations between teacher expectations and student IQ. The author claimed that although effects of teacher expectations on student IQ is controversial, it is

unquestionable that teacher expectations did affect other kinds of school performance (Spitz, 1999).

More recent meta-analyses included both experimental and naturalistic studies. Jussim and Harber (2005) claimed that the effect size of teacher expectations ranged from $d = 0.2$ to $d = 0.41$, but they acknowledged that expectation effects might be much larger for some students (such as students from poorer communities) and under some circumstances, such as transition from high school to university (Jussim & Harber, 2005). Later, Jussim and colleagues (2009) deduced that the average expectation effects across 14 naturalistic was $d = .035$. However, the limited number of studies included in Jussim and colleagues' study may influence the generalisation of the research results. In the same year, Hattie analysed hundreds of studies regarding the teacher expectations field. He found that although the overall effect size is $r = .43$, the expectation effect on student outcomes may be greater for some students (e.g., students from a lower socioeconomic background), and with some teachers (Hattie, 2009).

Apart from the experimental studies and meta-analytic research, most research regarding teacher expectations was conducted in naturalistic settings, as mentioned previously, which will be discussed in later sections. The next section will focus on the main theoretical models of teacher expectations.

Theoretical Models of Teacher Expectations

After the original landmark study by Rosenthal and Jacobson (1968), several theoretical models of teacher expectations have been proposed for the purpose of identifying the teacher expectation process. Those models have concentrated on explaining how teacher expectations are formed, and how those expectations can influence students' performance and outcomes as a result of students' interpretations and teacher-student interactions. These

models attempt to provide a holistic view of the teacher expectation process. In this section, seven models will be explicated, respectively: Brophy and Good's model (1970), Rosenthal's four-factor theory (1974) and Harris and Rosenthal's two-factor theory (Harris & Rosenthal, 1985), Cooper's model (1979), the model of Darley and Fazio (1980), Weinstein's model (2002), and Rubie-Davies' model (2014).

Brophy and Good's model (1970). The first model that tried to explicate the classroom expectations process was Brophy and Good's model. This model emphasised the importance of differential teacher behaviours that indicated teachers' different expectations for students. It also emphasised the role of students in mediating teacher expectations effects, which advanced understanding of the mediation process of teacher expectations. This model includes the following steps:

1. Teachers form differential expectations for individual students in regard to their behaviour and achievement at the beginning of the year.

2. In their daily work, teachers behave differently with students, according to their differential expectations.

3. Students gradually know something about what their teachers' expectations of them are, by observing their teachers' behaviours.

4. Students' self-concept, achievement motivation, levels of aspiration, classroom conduct, and interactions with teachers will be influenced by their teachers' treatment, on the condition that both teachers and students accept and sustain the manner, method, or mode associated with the teacher treatment.

5. These effects gradually complement and reinforce teachers' expectations, and students behave in conformity with these expectations.

6. Ultimately, students will demonstrate different academic achievement or social performances, which have been influenced by their teachers' different expectations for them.

Although this model made a significant contribution to the literature, there were two limitations. First, the model ignores the influence of teachers' distal behaviours (such as teacher beliefs about how learning should be delivered to students), and second, class-level teacher expectations were not mentioned. Nonetheless, given that some students with disabilities might respond mainly to teachers' proximal behaviours and have difficulties recognising their teachers' distal behaviours related to them, this model may provide a clue in understanding teacher expectation effects for those students.

Rosenthal's four-factor theory (1974). Rosenthal examined the ways in which teachers differed their interactions with high and low expectation students, and identified four factors mediating teacher expectation effects, which were:

1. Climate: socioemotional environment that teachers create for their students.

2. Feedback: different types of feedback (e.g., praise or criticism) teachers provide to students regarding their performance.

3. Input: different efforts including time and attention teachers pay to students, and different teaching materials teachers provide to students.

4. Output: different learning opportunities and support teachers provide to students.

Later, Harris and Rosenthal (1985) modified the four-factor theory into two factors when conducting a meta-analysis. They found that the effect sizes of the four factors were different. Specifically, the climate and input factors had the largest effect sizes ($r = .35$), followed by the output factor ($r = .20$), and the feedback factor had the smallest effect size ($r = .07$). Based on what they found, Harris and Rosenthal combined the original input and

output factors as a new factor, which they called effort. They also renamed the original climate factor as affect while they deleted the original feedback factor due to its small effect size (Harris & Rosenthal, 1985). Their findings highlighted the importance of the socioemotional environment in mediating teacher expectations. However, their findings regarding feedback showed it had very negligible effects on student achievement. One of the possible reasons for this was that teachers controlled their feedback behaviours because they had learnt from teacher expectancy research.

Cooper's model (1979). The expectation communication model developed by Cooper has extended understanding of the teacher expectation process by applying social theory into the model. In this model, several factors were emphasised as the mediators of teacher expectation effects.

1. Teachers hold different expectations regarding students' performance.

2. Teachers hold specific perceptions of how to manage student performance, which is based on teacher expectations and the teacher-student interaction context.

3. Teachers' sense of control (students and class control) affects their feedback and the socioemotional climate in the classroom.

4. Teachers' different interactional behaviours influence students' self-efficacy regarding the importance of effort in producing desirable personal outcomes.

5. Students' self-efficacy further influences their motivation to study and finally influences their academic performance.

Cooper's model put the emphasis on the role of the teacher-student interaction context, feedback, and classroom climate in mediating teacher expectation effects. According to Cooper, teachers' sense of control would vary from different teacher-student interactions,

and between high and low expectation students. Those perceptions may result in students' different performances because they influence students' self-efficacy and motivation. Later, Cooper and Good (1983) pointed out that students' perceptions of teachers' behaviour still played a significant role in influencing the teacher expectation process, which added weight to the role of student interpretation in the model. However, this model seemed to assume that all teachers need a sense of control (both students and classroom) and all teacher-student interactions are based on the teachers' perceptions of control, which did not take the teachers' personalities and attributes into account.

Darley and Fazio's model (1980). Darley and Fazio developed a model in which the role of students in mediating teacher expectations effects were emphasised. Their model includes the following steps:

1. Teachers hold expectations for students based on information they received regarding students.

2. Teachers behave in accordance with their expectations.

3. Students interpret teachers' behaviour based on their own attributions and judgements.

4. Students respond to teachers based on their understandings of teachers' behaviours.

5. Teachers interpret students' responses.

6. Students further interpret the interactions with their teachers.

The role of students in mediating the teacher expectation process was exaggerated in this model. It mainly focused on the dyadic teacher-student interaction but ignored that the

socioemotional climate of the class may also play a role in influencing teacher expectation effects.

Weinstein's model (2002). Weinstein highlighted the role of ecological framework in understanding teacher expectations. She proposed that expectancy effects occur in interdependent environmental contexts of classroom, schools, and community. Students' responses to teacher expectations are a result of interaction between individuals and environments, and relevant variations, which, in turn, affects students' susceptibility to teacher expectation effects. In addition, time background is a significant factor in the ecological environment because students' previous experiences of teacher expectations may influence the ways in which students react to teacher expectations. Weinstein also claimed that personal relationships in the classroom, family, and school play an important role in mediating teacher expectations. Furthermore, she emphasised the importance of understanding teacher expectations from the perspective of students, and dedicated her work to identifying how students perceive and react to teacher expectations.

Unlike the models discussed above, which attempted to understand teacher expectation effects from the perspective of teacher and student relationships, Weinstein's model extended understanding to a broader ecological system: students' interrelationships with multilevel environments influence expectancy effects. The emphasis of contextual factors (e.g., time) in Weinstein's model may also help understanding of teacher expectation effects across different levels of schooling.

Rubie-Davies' model (2014). The latest conceptual model of teacher expectations was developed by Rubie-Davies. It integrated the merits of previous models, and took teachers' distal behaviours into consideration, which has enabled the teacher expectations

mediation and moderation process to be understood more comprehensively. In this model, the following steps were listed:

1. The teacher holds beliefs about teaching, learning, and children. Combined with his/her personal beliefs and stereotypes, the teacher will form their ideas in terms of learning opportunities and expectations for different students. Once these beliefs are formed, they tend to be robust even if they face contradictory evidence.

2. Based on early information about students' prior academic and behavioural performance, the teacher forms expectations for individual students in terms of their learning and behaviour. Meanwhile, expectations for the performance of the whole class are also formed. Accordingly, the socioemotional and instructional climate is structured in line with teachers' beliefs and expectations.

3(a). The teacher transmits his/her expectations to the students both individually and for the whole class of students through their verbal or non-verbal behaviours in the classroom. The instructional and socioemotional climate in the classroom further reinforces the representations of these expectations.

3(b). Accompanying the expectations, teachers plan and deliver opportunities for the students to learn.

4(a). Students interpret the teachers' corresponding verbal and non-verbal behaviours and interactions. The climate of the classroom will play a role in that interpretation.

4(b). Students participate in the opportunities provided by their teacher.

5(a). The students may or may not act on the teacher's interaction, which indicates the teacher's expectations for their academic performance and behaviour. The students' self-efficacy and motivation may serve as mediators.

30

5(b). Student learning occurs in accordance with the opportunities provided for learning, student motivation, and the socioemotional climate of the classroom.

6. Students outcomes take place as a result of the learning opportunities they have experienced, in relation to their interpretation of their teacher's expectations, indicated by the teacher's verbal and nonverbal behaviours, and to the extent that the students have accepted the teacher's expectations.

Rubie-Davies' model specifically emphasised the importance of the role of distal behaviours in establishing and revealing teacher expectations, and those distal behaviours can influence student learning. Moreover, the role of instructional practices and classroom climate as mediators in influencing teacher expectations for whole classes was emphasised in Rubie-Davies' model. Finally, both the teachers' role and the students' role in the mediation process of teacher expectations were considered (Li, 2014).

Although there are different emphases in terms of the teacher expectation theoretical models reviewed above, there is a consensus with regard to the basic process of teacher expectations. Teachers form their expectations for student academic achievement and social development based on information they have; teachers behave differently in the classroom, which is in accordance with their different expectations for students; students respond to teachers' behaviours and expectations based on their interpretations, and, in turn, generate a particular outcome.

As mentioned previously, hundreds of studies have explored teacher expectations in naturalistic settings following the seminal work of the Pygmalion experiment. Those studies explored teacher expectancy from different aspects. Some research focused on factors that mediated teacher expectations effects whereas others explored factors that moderate teacher expectations. In the current thesis, all those factors were mainly categorised as student-

related factors or teacher-related factors that influence teacher expectations. In the next sections, influential student factors in the formation of teacher expectations will be reviewed briefly.

Student-related Factors that Influence Teacher Expectations

Previous research has explored the role of student-related factors in tempering teacher expectations, and found several factors may matter. Student characteristics such as student gender, socioeconomic background, and ethnicity were found to relate to teacher expectations. In addition, student prior achievement was strongly linked to teacher expectations.

Student prior achievement. Student prior achievement normally refers to student performance in previous examinations or standardised tests. It was regarded as one of the most influential factors in influencing teacher expectations (Jussim et al., 1996). The meta-analysis conducted by Dusek and Brophy (1983) revealed that teacher expectations for students were strongly related to the information (such as student prior achievement) that teachers got before the academic year (d =.85). In a longitudinal study, Hinnant and colleagues (2009) found that students' performance in preschools significantly predicted teacher expectations for their reading achievement in the first, second, and fifth grade and mathematics achievement in the third and fifth grade (Hinnant et al., 2009).

Recent studies suggested a strong bidirectional relationship between teachers' prediction of students' later performance and students' previous academic achievement (Mistry, White, Benner, & Huynh, 2009). When conducting a longitudinal study, Mistry and colleagues (2009) found that student academic achievements were closely linked to teacher expectations, and they pointed out the relations between teacher expectations and student achievement was two-way (Mistry et al., 2009). Later, Rubie-Davies and colleagues found

similar results, and suggested that over a long time period, teacher expectations may predict student achievement, and student achievement may predict teacher expectations (Rubie-Davies et al., 2014).

Student ethnicity. Some research has found that student ethnicity plays a role in influencing teacher expectations. Dusek and Brophy (1983) found that teachers held higher expectations for white students than black or Mexican students. This was further supported by other research conducted in the United States (Figlio, 2005; McKown & Weinstein, 2008; Wigfield, Galper, Denton, & Seefeldt, 1999). For example, Tenenbaum and Ruck (2007) found that teachers were more likely to form higher expectations for Asian American students, followed by European American students while they held the lowest expectations for Latino students (Tenenbaum & Ruck, 2007). In New Zealand, Rubie-Davies and colleagues found that teachers held lower expectations for Māori students compared to students from other ethnicities (New Zealand European, Asian, Pasifika). Interestingly, Māori students' year-end achievement was below their New Zealand European and Asian counterparts but not at the beginning of the academic year (Rubie-Davies, Hattie, & Hamilton, 2006). More recently, Rubie-Davies and colleagues reported that teachers hold positively biased expectations for Asian students in terms of their mathematics achievement. Specifically, teachers were more likely to have positive expectations for those students' year-end mathematics achievement than their actual performance (Peterson et al., 2016)

Student gender. Gender stereotyping has been found to influence teacher expectations. Good and Findley (1985) reported that teachers were more likely to hold higher expectations for girls in terms of their reading achievement while holding higher expectations for boys in relation to their mathematics achievement, which has been supported by other studies (Hinnant, 2009; Li, 1999). For example, Hinnant (2009) found that teachers

were more likely to expect higher achievement for female students than male students with

regard to reading (Hinnant et al., 2009). Li (1999) suggested that teachers tended to have

higher expectations for male students and have better attitudes towards them in mathematics.

Those differential expectations caused teachers to interact with female and male students

differently for different subjects (Good & Findley, 1985).

Students' socioeconomic status. In an earlier study, Rist (1970) observed a

kindergarten classroom 80 days in one year. He found that the teacher in the classroom

divided the children into high, average, and low achievement groups, which were mainly

based on students' socioeconomic status. After that, extensive research has reported

consistent results that students from low socioeconomic backgrounds are more likely to be at

risk of lower teacher expectations (e.g. Channouf et al., 2005; Hamilton, Sherman, & Ruvolo,

1990; Jussim, 1986). For example, Speybroeck and colleagues (2012) investigated the

relationship between teacher expectations for children's achievement and children's social

class background by investigating nearly 4000 children in kindergartens. They found that

teachers held lower expectations for students from low socioeconomic families. Their lower

expectations further influenced children's language and mathematics achievements by the end

of the year, although the researchers pointed out that the effect size was small (Speybroeck et

al., 2012).

Other studies have explored the relationship among teacher expectations, student

gender, and students' social class background (e.g. Auwarter & Aruguete, 2008; Childs &

McKay, 2001; McGraw, Lubienski, & Strutchens, 2006). Auwarter and Aruguete (2008), for

example, investigated 106 teachers across elementary and high schools. They found that

participants in their study showed more favourable expectations for boys from high

socioeconomic status (SES) background while they showed more positive expectations for

girls from low SES background. It appeared that student gender may play a role in influencing the association between teacher expectations and student SES.

Student labels. Research regarding teacher expectations of labelled children was initiated by Dunn in 1968 when he reported that labelling students with disabilities could have adverse effects on teacher expectations for pupil performance (Dunn, 1968). The relations between labels and teacher expectations have been examined by researchers since then. Most studies have shown that children labelled as 'exceptional' may generate negative expectations among teachers (e.g., Algozzine et al., 1977; Koonce et al., 2004; Minner & Prater, 1984), which can, in turn, influence children's development adversely. For example, Gillung and Rucker (1977) found that teachers who worked in regular and special education schools tended to hold lower expectations for the same child when he was described as handicapped than when he was described as a typically developing child. This finding has been supported by Shobo, Meharie, Hammer and Hixson (2012) recently.

Some studies have explored teacher expectations for different types of labelled students (e.g., Foster & Ysseldyke, 1976; Minner & Prater, 1984; Osterholm et al., 2007; Salvia, Clark, & Ysseldyke, 1973). Osterholm and colleagues (2007) reviewed 34 studies focusing on students labelled with learning disabilities from 1970 to 2000. They suggested that labelling students with learning disabilities generated negative teacher expectations, which may lead those students to make less effort in learning and therefore achieve at a lower level (Osterholm et al., 2007). Stinnett and colleagues (2001) investigated pre-service teachers' judgement about students with attention deficit hyperactivity disorder (ADHD). They prepared four vignettes with the main differences between them being the student label (student with ADHD) and treatments (special education setting or on medication), and then randomly assigned 144 teachers to read one vignette. The results revealed that teachers

appeared to give more negative judgements and reduced expectations for students with the ADHD label than students without this label in terms of their attentional difficulties (Stinnett, Crawford, Gillespie, Cruce, & Langford, 2001). Later research conducted in Australia showed similar findings (Woodcock & Vialle, 2011).

Some researchers have focused on comparing whether teacher expectations would differ for students with different descriptions or different sorts of labels. Foster and Ysseldyke (1976) explored teacher expectations for children labelled with different disabilities. They randomly assigned 100 elementary teachers into four groups. Each group dealt with students with one hypothetical label: emotionally disturbed (ED), learning disabilities (LD), mentally retarded (MR), and normal. Teachers were firstly asked to express their expectations for their students' behaviour. The research indicated that teachers tended to have negative expectations for children categorised with disability labels (ED, LD, or MR) in comparison with those labelled as normal. Although labels were all related to negative expectations, labelling students as MR generated more undesirable expectations than labelling students as LD and ED. In the second phase, teachers were asked to complete the referral form after they saw a video tape which displayed a normal boy. It showed that teachers were more likely to maintain their expectations for the student even if they met performances that were inconsistent with their expectations. The maintaining of original expectations resulted in the Halo effect (Foster & Ysseldyke, 1976). For example, teachers whose first impression about a child displaying ADHD behaviour in a video were more likely to rate this child's behaviours in a more negative light than those whose first impression about a child displaying normal behaviour (Cornett-Ruiz & Hendricks, 1993). Those different first impressions may lead to teachers forming erroneous judgements about children with ADHD (Stevens & Quittner, 1998).

36

Although the studies reviewed above have examined the possible relations between student labels and negative teacher expectations, none of them focused on the possible effects that teacher expectations have on students labelling as ASD. There is a gap in the literature, indicating a need for an investigation into the relations between teacher expectations and students with ASD.

Students' other personal characteristics. In addition to the factors discussed above, students' other personal characteristics may also influence teachers' expectations. Research has shown that student name (e.g. Anderson-Clark, Green, & Henley, 2008; Dusek & Joseph, 1985; Vail, 2005), student physical attractiveness (e.g. Braun, 1976; Dusek & Joseph, 1985; Entwisle & Alexander, 1988), student age or students having transferred to a new environment (e.g. Cain & Dweck, 1995; Kuklinski & Weinstein, 2001; Li, 2014), and students' siblings (e.g. Richey & Ysseldyke, 1983; Seaver, 1973) also play a role in influencing teacher expectations. For example, Anderson-Clark and colleagues (2008) explored the relations between teacher expectations, student ethnicity, and student name. They investigated 130 elementary teachers and asked them to rate their expectations for a virtual fifth-grade student, with four different versions. The differences were created by the different combination of name (white-sounding name or African-sounding name) and race (African American or Caucasian). Research showed that respondents gave lower expectations for African American-sounding names than white-sounding names, regardless of the student's ethnicity (Anderson-Clark et al., 2008).

The studies reviewed above focused on student-related factors that influence the formation of teacher expectations. In the next section, factors relating to teachers that also play a role in influencing teacher expectations will be discussed. Firstly, research regarding the relations between teacher behaviours and teacher expectations will be reviewed, followed

by studies related to the role of teacher beliefs and teacher self-efficacy in shaping teacher expectations, and, finally, studies in relation to teacher knowledge and teacher expectations.

Teacher-related Factors that Influence Teacher Expectations

Some factors related to teachers were found to play a role in influencing teacher expectations. These include teacher behaviours, teacher beliefs, and teacher self-efficacy. These factors will be discussed in the following sections, respectively.

Teacher behaviours. Teachers may transmit their expectations to students through teacher behaviours (e.g., Cooper & Good, 1983; Rubie-Davies, 2007). In this section, the definition of teacher behaviours and the possible relation between teacher behaviours and teacher expectations will be discussed briefly.

The definition of teacher behaviours. Teacher behaviours consist of proximal behaviours and distal behaviours. While the former can be defined as "direct exchanges that occur between teachers and students" (Rubie-Davies, 2008, p. 54), the latter can be described as the behaviours that happen "outside the day-to-day interactional classroom context" (Rubie-Davies, 2008, p. 53). Specifically, proximal behaviours include teachers' verbal and non-verbal interactions and physical behaviours, in that they communicate teacher expectations to students directly. Distal behaviours include teachers' beliefs and the ways in which teachers plan and the kinds of lessons they deliver to students, the teacher's decision about how to group students, and the ways the teacher initiates and maintains a particular classroom climate. Those distal behaviours are closely related to the opportunities to learn provided by teachers, which communicate teacher expectations to students indirectly (Rubie-Davies, 2008, 2014). Significantly more studies exist that examine teachers' proximal behaviours than those which examine distal behaviours, and the main focus of discussion in this section is teachers' proximal behaviours.

Teacher behaviours as a mechanism of teacher expectations. Teacher expectations can directly influence the ways in which teachers interact with their students, which affects students' responses accordingly (Good & Brophy, 2000). Brophy and Good (1970) explored the relations between teacher expectations and teacher-student interactions by observing them in several classrooms. Before any observation, teachers were asked to rank their students according to students' achievement, and each teacher's rankings were used as the proxy for teacher high/low expectations for their students. Based on the teachers' rankings, six students (three girls and three boys) with the highest rank and six students with the lowest rank were observed. The researchers found that the teachers differed in their behaviours when interacting with high expectation and low expectation students. For example, teachers tended to praise high expectation students more often when answers were correct and to criticise them less often when answers were incorrect when compared to their response to low expectation students. In addition, teachers were more likely to accept poor performance from low expectation students than from high expectation students (Brophy & Good, 1970). Other studies have reported similar findings, but add the information that teachers tended to interact in public with students for whom they held high expectations, whereas they tended to interact privately with the students for whom they held low expectations (Cooper, 1985; Cooper & Good, 1983).

Brophy (1985) further summarised 17 behaviours that covered teachers' differential expectations to high or low expectation students. Teachers differed in a range of behaviours, including wait time, response following an incorrect answer, reinforcement, criticism, praise, public responses, attention and interaction, asking for student response, seating, quality of task completion, public and private interactions, grading of tests, friendliness of interactions, feedback, eye contact and non-verbal communication, and providing instruction and instructional methods. Taking teachers' feedback as an example, teachers were more likely to

give informative feedback to their high expectation students in comparison to their low expectation students. In addition, teachers made more eye contact with their high expectation students and interacted with them in a friendlier manner, such as making more eye contact with and smiling more towards high expectation students. Therefore, high expectation students were more aware of their learning progress than their low expectation peers.

The research reviewed above provided some clue to the differential teacher behaviours in transmitting teacher expectations. Although most of the identified behaviours in those studies were subtle and imperceptible, students were able to notice and perceive teachers' differential behaviours over time. As a result, teachers' differential behaviours could have an undesirable effect on low expectation students (Rubie-Davies, 2014). However, some researchers argued that those behaviour variables ranged from very specific behaviours (e.g., smiling, head nods) to impressionistic judgements, such as the warmth of the classroom climate (Babad, 1993), which may be analysed at different levels. In addition, none of these studies provided the effect size of the identified behaviours, so whether those behaviours played a significant role in mediating teacher expectations was unknown.

Harris and Rosenthal (1985) conducted a meta-analysis and listed 31 specific behaviours which mediated teacher expectations. They found six behaviours showing significant effect sizes (rs above .28), which were: negative and positive climate (e.g., teachers' warmth or affect), physical distance, off-task behaviour, input, and duration of interaction. More than half the behaviours (17 behaviours) showed moderate effect sizes and inconsistent patterns, such as teachers' questions and the frequency of eye contact. Nearly one-third of behaviours (nine behaviours), such as touching students and praising them after correct answers, produced a very small effect size.

Teacher beliefs. Teacher beliefs influence their classroom decisions and behaviours (e.g., Fives & Buehl, 2012; Pajares, 1992). Teacher beliefs regarding their role in enhancing student learning, their perceptions about their students, and their beliefs about how to provide learning opportunities to their students closely guide their behaviours in the classroom (Rubie-Davies, 2008, 2014), and, in turn, influence students' learning through the learning opportunities they provide to students (e.g., Ammon & Levin, 1993; Levin, 2015; Levin, 2015; Rubie-Davies, 2014). In order to better understand teacher expectations and teacher behaviours, it is imperative to explore teacher beliefs. However, very little research has paid attention to the role of teacher beliefs in influencing teacher expectations. The next section discusses the definition of teacher beliefs and will be followed by a discussion of the existing expectation literature related to teacher beliefs, specifically, teacher beliefs about how learning should be delivered to students, and teacher self-efficacy.

The definition of teacher beliefs. The definition of teacher beliefs has been discussed in various ways by different researchers because they placed different emphases on the different dimensions of belief. Some researchers have focused on the implicit or explicit characteristics of teacher beliefs while others have examined the relations between teacher beliefs and teacher knowledge (see Fives & Buehl, 2012). No matter what the specific definition of teacher beliefs might be, research has suggested that teacher beliefs play a significant role in influencing teachers' thinking and behaviour (Ashton, 2015). According to Rubie-Davies (2014), teacher beliefs included "the ways in which teachers believe their role should be fulfilled, their underlying philosophies, and their implicit theories about teaching and learning" (p. 48). This definition was used in the current study.

Teacher beliefs about opportunity to learn. As mentioned above, although the teachers' interaction with students is the explicit and salient behaviour in daily teaching,

teachers' beliefs about what learning opportunity to provide for students is the implicit and underlying behaviour, which may be "at the crux of teacher expectation effects" (Rubie-Davies, 2014, p. 34). Teacher beliefs about opportunity to learn can be influenced by teachers' beliefs about students' abilities to learn, how to group students, and the degree of differential instruction that should be provided for students through planning.

Teacher beliefs about students' abilities may not only influence teachers' decisions about what learning opportunities should be provided to students, but also influence teacher expectations for students. Only a few decades ago, Pidgeon (1970) found a possible underlying reason for higher achievement in mathematics in United Kingdom students compared with their United States peers. The curriculum designers in the two countries held different beliefs about what the students in Year 4 were able to learn. Those different beliefs influenced what was to be expected, what was taught and what was learned. Later, Wilkinson and Townsend (2000) proposed that best-practice teachers believed that all students would be able to gain independence in reading, and they expected them to. Those beliefs and expectations supported the teachers in providing various learning opportunities to assist and support every student's learning (Wilkinson & Silliman, 2000). In contrast, if teachers believed that students' abilities were innate and permanent, they would make little effort to change or promote the students' learning. Consequently, the students who were low achievers at the beginning of the year would still be lower achievers at the end of the year (Dweck, 2006).

Teacher beliefs about students' ability may be embedded with their teaching plan, demonstrating how differential instructions should be provided for students with different abilities. That is to say, planning is the first step where teachers transmit their beliefs towards teaching and learning into teaching practice, which may directly influence students' learning opportunities. Teacher beliefs about teaching and learning may be salient in their planning

42

for student learning (Fives, Lacatena, & Gerard, 2015). Teachers plan instruction based on their own expectations and beliefs about real achievement rather than the real performance of students (Timperley, Bullard, & Robinson, 1999). A review conducted by Shavelson and Stern (1981) revealed that teachers provided different instructional planning for students with high or low abilities in reading. Teachers emphasised comprehension and provided more flexibility in the procedures and tasks for the high ability students while they focused on procedures, decoding skill, and structured tasks for the low ability students (Shavelson & Stern, 1981).

Teachers also differed in their beliefs about whether students with different abilities should be provided with different learning opportunities. Based on the extent to which teachers differentiated their interaction with high and low expectation students, Brattesani, Weinstein and Marshall (1984) classified teachers as high or low differentiating teachers. High differentiating teachers treated their high and low achieving students in a very different way, whereas low differentiating teachers did not make too many differences when treating their high and low achieving students. They found that high differentiating teachers provided very different instructional activities to students with high or low expectations and they managed student behaviour in a more negative way (Brattesani, Weinstein, & Marshall, 1984). In contrast, low differentiating teachers provided similar materials to all the students and gave students similar tasks in the classroom (Weinstein, 2002).

Rubie-Davies (2007) examined whether teachers with uniformly high or low expectations for all the students would interact with students differently. Based on her previous study (2004), teachers with corresponding high or low expectations for all the students in the classroom were categorised into three groups, namely high expectation (HiEx), average progress (AvPr), and low expectation (LoEx) teachers. Teachers' behaviours

of HiEx, AvPr, and LoEx groups were compared and observed. An observation schedule including five categories and 30 subcategories was used in the study. The research showed that 17 of 30 subcategories showed statistically significant differences between the three teacher groups. Specifically, HiEx teachers and AvPr teachers were more likely to make instructional statements to students than their LoEx counterparts. For example, teachers from HiEx and AvPr groups spent more time orientating students to a particular topic, and linking previous and current knowledge. HiEx teachers provided more feedback to students regarding their learning than LoEx teachers. By contrast, HiEx and AvPr group teachers made fewer procedural statements than the LoEx group teachers.

With regard to teachers' differential beliefs about grouping of students, Weinstein's (2002) and Rubie Davies' (2008, 2014) research is worth mentioning. Weinstein (2002) found that high differentiating teachers grouped students by their homogenous abilities, while low differentiating teachers grouped students into mixed-ability groups. Rubie-Davies (2008; 2014) found that some high expectation teachers grouped students by their homogenous abilities, but they only used those groups for instruction, rather than for learning activities. In contrast, low expectation teachers grouped students for both instruction and learning activities. Students of high expectation group teachers made enormous gains in their academic achievement in an academic year, while students of low expectation group teachers made limited gains in achievement (Rubie-Davies, 2008, 2014).

Teachers appear to provide different learning opportunities to students in different ability groups. Previous research has shown that teachers were more likely to provide more challenging tasks and more cognitively demanding tasks to their high-ability group students than to low-ability group students (Arabsolghar & Elkins, 2001; Kuklinski & Weinstein, 2001). In contrast, students from the low-ability group were more likely to be provided with

44

less cognitively demanding tasks. Some of them may be provided with low-level tasks, even repetitive and boring tasks (Slavin, 1993).

Moreover, teachers with different expectations for students also had different beliefs regarding monitoring and assessing students' progress (Rubie-Davies, 2014). For high expectation teachers, setting goals with students and guiding students to achieve those goals were their priorities, and testing was regarded as an effective way to provide information about students' learning. Thus, they often gave students feedback about their learning. However, for teachers who had low expectations, testing was considered to have only a reporting and accountability purpose. Therefore, low expectation teachers considered they did not need to give students frequent feedback. Accordingly, students with high expectation teachers received more feedback regarding their learning than their counterparts with low expectation teachers (Rubie-Davies, 2014).

Apart from teacher beliefs about opportunity to learn, teacher self-efficacy is also related to teacher expectations and teacher behaviours, which in turn influence students' learning. In the following section, the definition of teacher self-efficacy and research exploring teacher self-efficacy, teacher expectations, and student learning will be reviewed.

The definition of teacher self-efficacy. The concept of self-efficacy, as proposed by Bandura (1977), can be regarded as one's belief about one's capability to bring about expected outcomes. Teacher efficacy refers to a teacher's beliefs about their own capability to bring about expected outcomes of students' learning and performance, no matter what the students' abilities might be (Bandura, 1977; Tschannen-Moran & Hoy, 2001). Soodak and Podell (1996) divided teacher efficacy into three uncorrelated factors: personal efficacy, outcome efficacy, and teaching efficacy. Whereas personal efficacy, in Soodak and Podell's research, referred to teachers' beliefs about their teaching ability, outcome efficacy referred to

the ways in which students' outcomes were attributed to teachers' teaching. The third factor, teaching efficacy, referred to teacher beliefs about the influence of external factors (outside of school) on the impact of teaching (Soodak & Podell, 1996). Soodak and Podell's definition dimensions of teacher self-efficacy have been adopted in the current study for the purpose of developing the relevant interview schedule. In other words, the current study focused on exploring teacher self-efficacy by using qualitative methods, which will be stated in detail in a later chapter.

Teacher self-efficacy, teacher expectations and student learning. Teacher efficacy has been proposed to be related to teacher expectations and teachers' behaviour, and, in turn, to influence student outcomes (Gibson & Dembo, 1984; Henson, 2001; Hoy & Woolfolk, 1993; Tschannen-Moran & Hoy, 2001; Woolfolk Hoy, Hoy, & Davis, 2009). Generally, it seems that teachers' sense of efficacy may influence their predictions of students' academic achievement. Teachers with a high sense of efficacy have been shown to be more likely to predict academic success for their students than their counterparts with a low sense of efficacy (Tournaki & Podell, 2005). Teachers' efficacy may also relate to teachers' instructional practices, teaching behaviour, and persistence (Tournaki & Podell, 2005; Tschannen-Moran & Hoy, 2001; Wolters & Daugherty, 2007). For example, teachers with greater efficacy were more likely to use effective management strategies to manage students (Dibapile, 2012) and give low achievers specific assistance (Ross, 1998), which further benefited students.

Research has found that teacher efficacy plays a role in influencing student achievement in reading, mathematics, language, and science (Caprara, Barbaranelli, Steca, & Malone, 2006; Tracz & Gibson, 1986). For example, Mojavezi and Tamiz (2012) investigated 80 teachers working in senior high schools and their 150 students, for the purpose of exploring the relations between teacher self-efficacy (especially teachers'

personnel efficacy and outcome efficacy), students' motivation, and students' academic achievement. The research found that teacher self-efficacy significantly correlated with students' achievement. Specifically, students who studied with teachers possessing high self-efficacy were more likely to perform better than those studying with teachers possessing low self-efficacy (Mojavezi & Tamiz, 2012).

Teachers who possess high personal efficacy may have a favourable impact on themselves and student learning. When teachers believed that they were able to improve their students' learning, despite the students' abilities, they were more likely to interact with students positively (Meyer, 1985); they were more willing to use evidence-based practice to teach students (Ruble, Usher, & McGrew, 2011); they were more willing to adapt their teaching to meet the students' needs (Saklofske, Michayluk, & Randhawa, 1988); and they were more willing to set challenging goals for their students (Ross, 1995). Teachers with high teaching efficacy might even pay more attention to students with low abilities (Soodak, Podell, & Lehman, 1998). When teachers succeed in teaching students with low abilities, they might have more sense of control in guiding student learning and have more flexible expectations for students' achievement (Eccles & Wigfield, 1985).

In contrast, teachers who possess low self-efficacy (especially personal efficacy and teaching efficacy) are more likely to have less motivation to enhance student learning, especially for those students for whom they have low teacher expectations (Warren, 2002). Teachers with a low sense of self-efficacy believed that students were not able to succeed in learning, and there was nothing they would do to change the unpleasant situation (student cannot succeed). These teachers tended to attribute the limited academic progress of those students to the students' families and cultures rather than their own low self-efficacy (Ashton & Webb, 1986). In addition, teachers with low self-efficacy might spend less time with those

students for whom they hold low expectations. As a result, those teachers with low self-efficacy might not tend to try a new teaching strategy or approach when their students could not understand the particular content. Students studying with the teachers with low self-efficacy, especially students for whom the teachers held low expectations, were more likely to have fewer opportunities to learn, and this could tend to further exacerbate their low level of learning (Jussim et al., 1996; Rubie-Davies, 2008).

Apart from the studies which mainly related teacher efficacy to high or low expectations of individual students, a few studies focused on the relations between teacher efficacy, teachers' class-level expectations, and student learning. For example, Archambault, Janosz and Chouinard (2012) explored teachers' self-efficacy and expectations for student mathematics achievement in Canada whereby teacher expectations were explored as a class-level predictor. They found that there was a high correlation (.55) between teachers' expectancy and self-efficacy, which further influenced student learning outcomes. The more teachers maintained high expectations and high efficacy, the more students' achievement increased in the academic year (Archambault, Janosz, & Chouinard, 2012).

Likewise, Li (2014) investigated class-level expectations of tertiary teachers in China and found that teachers' self-efficacy varied in line with their class-level expectations. Specifically, when teachers had high class-level expectations, they tended to show higher self-efficacy than teachers without high class-level expectations. These teachers with high expectations and greater efficacy were more likely to believe in their abilities to teach students effectively and help students to achieve more (Li, 2014). Consequently, students of high expectation teachers gained more in achievement at the end of the year than students of low and average expectation teachers.

In contrast, the study conducted by Rubie-Davies, Flint, and McDonald (2012) showed a different picture. The authors investigated the relations between teachers' class-level expectations, teacher efficacy, teacher goal orientation, and other teacher characteristics (such as gender and teaching experience). The research findings revealed that there was no relationship between teacher class-level expectations and teacher efficacy factors, or goal orientation (Rubie-Davies, Flint, & McDonald, 2012). The authors did not explain why the finding was different from that of previous studies. Because this study by Rubie-Davies and her colleagues is the only one to actually measure whether or not teacher efficacy is related to teacher expectations, more research in the field is needed.

This section has mainly reviewed studies related to teacher self-efficacy, teacher expectations and student learning outcomes. The following section will move to the research in relation to teacher knowledge and teacher expectations. A definition of teacher knowledge will be discussed, followed by a brief review of possible relations between teacher knowledge of a particular type of student and teacher expectations.

Teacher knowledge. The relation between teacher knowledge and teacher expectations will be discussed in this section, beginning with the definition of teacher knowledge.

The definition of teacher knowledge. It is widely accepted that the definition of teacher knowledge is "a complex amalgam" (Adoniou, 2014). Over the past several decades, researchers have dedicated studies to explore different aspects of teacher knowledge and have provided a variety of different perspectives to label it (Adoniou, 2014; Brown & McIntyre, 1993; Calderhead, 1996; Connelly & Clandinin, 1985; Shulman, 1987). Terms such as "personal knowledge" (Connelly & Clandinin, 1985; Elbaz, 1991; Titchen & Ersser, 2001), "professional craft knowledge" (Brown & McIntyre, 1993; Connelly, Clandinin, & He,

1997), "pedagogical content knowledge" (Gardiner & Iarocci, 2014; Magnusson, Krajcik, & Borko, 1999; Mishra & Koehler, 2006), and "(personnel) practical knowledge" (Johnston, 1992; Meijer, Verloop, & Beijaard, 2001) have been developed by researchers to represent what they understood about the different aspects of teacher knowledge. It appears that "over time the term teacher knowledge has expanded and broadened significantly" (Ben-Peretz, 2011, p.8). In this research, teacher knowledge is represented by "factual propositions and the understandings that inform skilful action" (Calderhead, 1996, p.715), and in this study, the researcher focused only on teacher knowledge about a particular type of student.

Teacher knowledge and teacher expectations. Teachers' knowledge about particular students has been shown to be a filter of teacher expectation effects (Rubie-Davies, 2014). Teachers' knowledge alongside teacher expectations may influence the variation of learning opportunities teachers provide to individual students and the extent to which students' individual needs are met by teachers. However, it is interesting to note that research focusing on the possible relations between teacher knowledge and teacher expectations is scarce. Most of the research has paid attention to teacher knowledge about students with special needs and its influence on teacher expectations for these students. Previous studies have consistently found that teachers were more likely to form higher or positive expectations for individual students with special needs in the situation where they were more knowledgeable about the particular type of students, no matter what kind of special needs students might have (Blotnicky-Gallant, Martin, McGonnell, & Corkum, 2014; Gilmore, Campbell, & Cuskelly, 2003; Sadler, 2005). This is also the case with regard to the relations between teacher knowledge of students with ASD and teacher expectations for these students, which will be discussed in detail in a later section.

The previous sections provided an overview of the factors influencing the formation of teacher expectations. The following section will focus on studies related to children with

ASD and their social impairments, which will form the basis of a discussion of teacher expectations for children with ASD.

Children with Autism Spectrum Disorder

   The definition and prevalence of children with ASD. Autism spectrum disorder (ASD) refers to a wide variety of complex developmental disorders that typically appear during the first three years of life. The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* published by the American Psychiatric Association (2013) discloses that children and youth with ASD are characterised by severe and pervasive impairments in several aspects of their development. As a life-time disability, (a) individuals with ASD have difficulty in communicating and interacting socially; (b) individuals with ASD have restricted and repetitive behaviour patterns as well as patterns of interests and activities; (c) those impairments start to present from the early stage of those people's lives and directly influence their daily life and socialisation (American Psychiatric Association, 2013).

   Moreover, some people with ASD have other associated disorders. According to *DSM-5*, many individuals with ASD also have intellectual impairment and/or language impairment, and some may suffer from attention-defect/hyperactivity disorder, developmental coordination disorder, and other disabilities (American Psychiatric Association, 2013). Rommelse and colleagues pointed out that 2050% of ASD children have attention-defect/hyperactivity disorder (Rommelse, Franke, Geurts, Hartman, & Buitelaar, 2010).

   It appears that the prevalence rate of children diagnosed as children with ASD has risen recently, from 1 in 110 (Center for Disease Control and Prevention, 2009) to 1 in 88 (Center for Disease Control and Prevention, 2012), and even more recently, 1 in 68 (Center for Disease Control and Prevention, 2015) in the United States. This may be partly due to

changes in diagnostic criteria and partly due to teachers, parents and the public being more

aware of this disability. No matter what the causation is, those children are eligible to receive

the best education (The New Zealand Disability Strategy, 2011). Providing appropriate

education and services for the striking increase in the number of children with ASD is one of

the biggest challenges for teachers, caregivers, and parents.

Although there is no cure for ASD children, there is a consensus that they can make

some progress with the proper support (Rosenblatt, 2008), no matter at which point they

begin to receive intervention (Glicksman, 2012). Undoubtedly, teachers are the key to

successful intervention in school settings (Magnusen, 2005; Ordetx, 2013). Ideally, teachers

should be required to understand the unique methods of teaching and supporting students

with ASD (Skuller, 2011), and to have high expectations for those students because high

expectations may help ASD students to make more effective progress (IDEIA, 2004).

However, the issue of what expectations teachers have for children with ASD is still

unknown.

Social impairment of children with ASD. Since impaired social skills is one of the

core characteristics of individuals with ASD, it has been used as the criteria for distinguishing

children with ASD from other children (American Psychiatric Association, 2013). More

specifically, the social difficulties of children with ASD are "more heavily weighted than

other areas" in terms of the diagnostic approaches (Reichow & Volkmar, 2010, P. 149).

A large body of research regarding autism has focused on the social impairment of

children with ASD (Conn, 2014; Wilkinson et al., 2010). For example, some researchers

have concentrated on dealing with relevant issues about social interaction, emotional

responsiveness, play, and friendship of children with ASD (Conn, 2014). In addition, issues

related to self-awareness, cognition, language, joint attention, and social understanding have

also been studied because they construct and form social development (Prizant & Rubin, 1999). Meanwhile, some intervention programs such as Treatment and Education of Autistic and related Communication-handicapped Children (Schopler, 1994), Applied Behaviour Analysis (Lovaas, 1987), Social Story (Gray, 1994), the Developmental, Individual Difference, Relationship-Based (DIR)/Floortime™ (Greenspan & Wieder, 1997) have been developed to remediate the impairments related to children with ASD, especially their social impairments. To date, great progress has been made to improve the social development of children with ASD, but much work remains to be done (Weiss & Harris, 2001).

In order to better understand the impairment of socialisation among children with ASD, a comparison of social interaction between ASD children and typically developing children, or even children with other disabilities, is worth exploring. Research has shown that children with ASD do engage in some degree of social activities, such as play, peer interaction, and other classroom social networks (e.g., Chamberlain, Kasari, & Rotheram-Fuller, 2007; McGee, Feldman, & Morrier, 1997). However, they spend less time in proximity to other children and spend more time in performing some atypical behaviours, such as obsession with hand-flapping, in comparison with their typically developing peers (Lord & MaGill-Evans, 1995; McGee et al., 1997). Further, children with ASD spend a large amount of time in solitary play or in play that is uncoordinated with their peers' activities. Moreover, they are less likely to initiate an interaction with their peers and respond to the initiations from their peers including typically developing children and children with other disabilities, specifically, children with Down's syndrome and developmental delay (Sigman & Ruskin, 1999). Because of their social performance in classroom, children with ASD are often socially peripheral to their classes (Locke, Ishijima, Kasari, & London, 2010).

The social interaction patterns seen in children with ASD may mainly be due to their social skills deficits (McConnell, 2002; Wing, 1997). Social skills refer to the essential behaviours that give rise to positive social interactions (Elliott & Gresham, 1987) and include both verbal and non-verbal behaviours that result in effective interpersonal communication (Matson, Matson, & Rivet, 2007; Rao, Beidel, & Murray, 2008). Social skills play a significant role in people's lives, having an immediate impact in terms of students' daily interaction (both with their peers and adults), and an important impact in establishing long-term relationships with others (Scott et al., 2000). In addition, social skills play a positive role in reflecting an individual's academic and school-related outcomes, and independent living capability (Cotugno, 2009; Elliott & Gresham, 1987; Lord, 1993).

For typically developing children, the acquisition of such social skills is a natural progression. However, this would be a huge challenge for children with ASD (Harper, Symon, & Frea, 2008). Without the appropriate intervention and support, children with ASD remain isolated in the classroom (Goldstein, Kaczmarek, Pennington, & Shafer, 1992; Pierce & Schreibman, 1997). For this reason, considerable research has been devoted to exploring effective interventions for improving the social skills of children with ASD. In their study, Matson and colleagues (2007) analysed 79 studies focusing on social intervention for children with ASD, and found that researchers have explored the interventions from different perspectives. They categorised those aspects into five topics: modelling and reinforcement, peer-mediated interventions, reinforcement schedules and activities, scripts and stories, and miscellaneous, which referred to combining some well researched treatment strategies such as Picture Exchange Communication System to teach students with ASD in inclusive classrooms (Matson et al., 2007). The authors claimed that more research regarding those aspects of social intervention is needed (Matson et al., 2007).

As social skills are measurable (Conn, 2014), studies have focused on assessing children's social skills, by using a range of different scales (e.g., Constantino & Gruber, 2002; Constantino & Todd, 2005; Gresham & Elliott, 1990; Hartman, Luteijn, Serra, & Minderaa, 2006). However, none of these are specifically designed to judge the social skill deficits of children with ASD (Bellini & Hopf, 2007). The development of the ASSP is the only measure to assess the social skills for children with ASD (Bellini, Peters, Benner, & Hopf, 2007). It aims to: (a) identify the social skill deficits of ASD children and, accordingly, use the scores to set their social goals (direct target of intervention); (b) assist in measurement of intervention progress. In the current study, the Autism Social Skills Profile was used to explore teacher expectations for ASD children's social development.

In conclusion, the social development of children with ASD has gained considerable attention from researchers. This may in part be due to the idea that social interaction plays a unique role in an individual's development and life, and may also be partly due to research interest that is motivated by a desire to improve the development, well-being, and functioning of these children.

Thus far, this review has focused on the core characteristics, especially the development of social skills of children with ASD. However, the current study will attempt to extend knowledge about teacher expectations for children with ASD in terms of their social development and academic achievement because these aspects have not been explored previously. Because teacher expectations may relate to teacher knowledge, behaviours, and beliefs, studies relating to teacher expectations for students with ASD and the teacher-related factors influencing teacher expectations for these students will be discussed in the following sections. The discussion will begin by focusing on research into teacher knowledge about

students with ASD, followed by teacher behaviours towards students, teacher beliefs about students with ASD, and, finally, teacher expectations for children with ASD.

Teacher Knowledge about Students with ASD

It is essential that teachers have accurate knowledge of their ASD students as those students have unique characteristics that are quite different from typically developing students and students with other disabilities. If teachers do not have accurate knowledge as well as an understanding of the features of autism, they may not understand the causal processes of ASD students' particular behaviours (Bailey, Phillips, & Rutter, 1996), and may experience tension and anxiety when they teach such students (Emam & Farrell, 2009). In other words, teachers' knowledge about autism is a vital factor that could affect teachers' abilities in dealing with the learning difficulties of ASD children (Gwernan-Jones & Burden, 2010). The inaccurate knowledge teachers have may further cause teachers to have inaccurate views about ASD students (Armstrong & Galloway, 1994) and hold either high or low expectations (inaccurate expectations) for these children (Helps et al., 1999) which may, in turn, adversely influence the ASD students' social and academic development.

Research regarding teachers' knowledge of children with ASD has tended to be inconsistent over the past several decades. Stone (1987) developed a survey to investigate professionals' (including paediatricians, school psychologists, speech/language pathology, and clinical psychologists) views and knowledge relating to autism by using a Likert-type scale. Meanwhile, Stone selected 18 specialists in the field of autism to be the comparison group (to the professionals listed above). The results revealed that many professionals demonstrated inaccurate knowledge about autism. For example, compared with the professionals in the four disciplines, specialists were more likely to agree that most people with ASD also had mental retardation and autism was a lifetime disability. In addition, the

professionals in some disciplines held possible misconceptions about autism. Paediatricians, for instance, did not believe that most ASD children could talk (Stone, 1987).

Based on Stone's survey, some research has focused on examining autism knowledge from the perspective of different professionals, such as teachers and parents (Stone & Rosenbaum, 1988), special education teachers and general education teachers (Helps et al., 1999; Mavropoulou & Padeliadu, 2000), specialists working in hospitals or research centres (Campbell, Reichle, & Van Bourgondien, 1996; Heidgerken, Geffken, Modi, & Frakey, 2005), and even undergraduate students who study with students with ASD (Gardiner & Iarocci, 2014). Research has shown that all the respondents held some degree of misconceptions about or outdated knowledge in terms of autism (Heidgerken et al., 2005; Stone & Rosenbaum, 1988). In addition, teachers with more experience held more accurate knowledge about autism than other teachers with less experience (Campbell, et al., 1996).

Helps and colleagues (1999), for example, modified Stone's Autism Survey to investigate teachers' knowledge of ASD from the perspective of special education teachers, mainstream school teachers, and support staff. They found that most participants in their study lacked the most basic knowledge about autism, and held either outdated or confused beliefs about autism. Furthermore, teachers who worked in mainstream schools had poorer knowledge about autism than special education teachers who tended to have comparatively better understanding of how to teach students with ASD by using appropriate strategies (Helps et al., 1999). Later, Mavropoulou and Padeliadu (2000) revealed that although special education teachers seemed to be better equipped with knowledge of autism (especially in terms of the characteristics of autism) than their general education counterparts, both types of teachers held some misconceptions in terms of the cause of autism. They further pointed out that more training focusing on autism-specific characteristics and individualisation of

education should be provided for both special education teachers and general education teachers (Mavropoulou & Padeliadu, 2000).

Apart from the studies that used the Autism Survey, other researchers have explored general education teachers', or special education teachers' and other school personnel's knowledge about autism by using different measures such as the modified version of Autism Inclusion Questionnaire or self-developed questionnaire (Barned, Knapp, & Neuharth-Pritchett, 2011; Humphrey & Symes, 2013; Segall & Campbell, 2012; York, Von Fraunhofer, Turk, & Sedgwick, 1999). For example, a recent study conducted by Segall and Campbell (2012) found that school psychologists were the most knowledgeable group regarding children with ASD, followed by special education teachers. The knowledge of these two groups of participants was significantly higher than their counterparts' who worked as general education teachers and administrators. Overall, general education teachers and administrators did not have adequate knowledge of autism. For example, they were not able to answer nearly half of the items regarding their knowledge of autism. In addition, teachers' knowledge of autism significantly predicted teachers' awareness of practice, and teacher knowledge and experience significantly predicted teachers' practice (Segall & Campbell, 2012), which highlighted the role of teacher knowledge in influencing teachers' practice.

In subsequent studies by Hendricks (2007, 2011), special education teachers' knowledge related to autism was examined by using a self-designed questionnaire, namely, the Needs Assessment of Special Educators who Serve Students with Autism. Teachers' knowledge of ASD people's general characteristics, individualised and supportive strategies, communication, social skills behaviour, and sensory motor development were examined. The research showed that teachers' knowledge of autism was mainly at the intermediate or even the low level (the total mean score of knowledge was in the low range). Specifically, teachers revealed that they had higher levels of knowledge regarding general characteristics of autism

while they knew least about autism in terms of sensory motor development. They required more training, especially in knowledge about the development of children's social skills (Hendricks, 2011; 2007)

Unlike previous studies revealing teachers' inadequate knowledge about autism, York and colleagues found that both general education teachers and special education teachers held relatively accurate and similar knowledge about autism (York et al., 1999). This may be partly because the researchers in that study asked the respondents to list only three core characteristics of autism. Even though special education teachers and general education teachers seemed to possess similar knowledge of autism, they held different views in terms of the instructional priorities for teaching ASD students. For example, while regular teachers paid more attention to developing ASD children's positive relationships with others, special education teachers put more emphasis on addressing ASD children's core impairments, such as reducing their repetitive behaviours (Mavropoulou & Padeliadu, 2000). This may be partly because mainstream school teachers are more likely to emphasise the inclusion of students with ASD and also because cooperation skills are one of the most important social skills for school success from the perspective of general education teachers (Lane, Pierson, Stang, & Carter, 2009). In contrast, special education teachers are more likely to emphasise the individual's needs because they may have students with more severe impairments in their classrooms. Consequently, they tend to work on the individual child's core impairments.

Teacher Behaviours towards Students with ASD

Little research has focused on teacher behaviour or instructions towards students with ASD in terms of their academic learning in the classrooms. Simpson and Souris (1988) explored the interactions between teachers and students with ASD or students with mild mental retardation. They observed behaviours of both teachers and pre-schoolers in

structured academic settings. The observation included four categories with 15 target behaviours: positive behaviours (e.g., praise, assist), negative behaviours (e.g., disapprove, disrupt), neutral responses (e.g., instruct, question), and no response. The research showed that teachers' and teacher aides' positive verbal behaviours frequently generated positive responses or no responses for both students with mental retardation and students with ASD, which highlighted the importance of teachers' positive behaviours in shaping positive behaviours of students (Simpson & Souris, 1988).

Irvin, Boyd and Odom (2015) examined 33 teachers' 'talk' (the types and frequency of verbalisations towards students) in relation to 73 students with ASD who were between three to five years old in the inclusive classroom. The descriptive data revealed that in more than half of teachers' talk, it was hard to identify whether it related to the particular students with ASD (52% of the total talk). With regard to the identified verbalisation made by teachers, the most frequent statements or questions were related to practical or personal assistance (14.6% of the total talk), followed by supporting student play, and teachers' statements regarding behaviour management was the smallest proportion of teachers' verbal behaviours (Irvin, Boyd, & Odom, 2015). Teachers' talk in this study may reveal that teachers did spend some time in providing ASD students with some form of talk. In addition, considering that teachers' talk related to academic activities only coded in the category of practical or personal assistance, the findings may also imply that most of the teachers' talk aimed to ensure ASD students participated in activities and classroom routines while very limited talk focused on helping students' academic learning (Irvin et al., 2015). This may be partly because the students in this study were pre-schoolers. More research exploring teachers' verbal behaviours towards ASD students in academic settings is needed.

Teacher Beliefs about Students with ASD

The relevant research regarding teacher beliefs of children with ASD is minimal. Schreck and Mazur (2008) examined how teachers' beliefs functioned in various treatments of people with ASD. The authors investigated 469 board certified behaviour analysts (BCBAs) who were practitioners who had received behaviour analysis certification in the United States. The results showed that BCBAs' beliefs in the effectiveness of the particular treatment directly influenced their use of that treatment. In addition, some teachers were reported to use some treatments that they believed difficult to implement, not cost effective, or even not supported by researchers, such as picture exchange communication system (PECS) and sensory integration. Whereas the former term is a pictorial system that was developed to help and enhance students' social-communication (Bondy & Frost, 1994), the latter was developed by Ayres (1972) and emphasises that providing sensory stimulation may improve the nervous system's ability to process sensory stimuli (Lang et al., 2012). Teachers' use of PECS and sensory integration means that teacher practice was not consistent with teacher beliefs (Schreck & Mazur, 2008). However, the author did not explain how and why consistency might come about.

In another study, Dillon, Fenlason, and Vogel (1994) concluded that the extent to which teachers used facilitated communication (which is a technique to assist people with severe communication and educational disabilities) was mainly dependent on three factors: teachers' beliefs in the effectiveness of this technique, teachers' beliefs in the intelligence of children with autism (ASD students may have better intelligence performance), and teachers' education background. Even so, the authors did not explain to what extent and how those factors related to teacher practice. In order to better understand the factors that influence teachers' practices, more investigations are needed to explore these relations (Dillon, Fenlason, & Vogel, 1994).

Almost without exception, these studies revealed that there was a discrepancy between teacher beliefs about students with ASD and their teaching behaviours, which is inconsistent with the previous idea that teacher beliefs are regarded as the precursors to their behaviours (Ajzen, 1991). This means that the relations between teacher beliefs about children with ASD and teacher practice need to be further explored. Given that teacher self-efficacy is one of the most important aspects of teacher beliefs, the next section will focus on teacher self-efficacy for teaching children with ASD.

Teacher Self-efficacy of Teaching Children with ASD

There is limited research related to teacher self-efficacy of teaching children with ASD. Engstrand and Roll-Pettersson (2014) explored preschool teachers' self-efficacy in teaching students with ASD. They found that teachers tended to believe that they played a significant role in influencing ASD student learning, in both academic and social areas, which was consistent with the findings of Park and colleagues (Park, Chitiyo, & Choi, 2010). In addition, they showed that teachers' self-efficacy was correlated to teachers' perceived knowledge which was acquired from in-service training. This further highlighted the importance of in-service training in promoting teachers' self-efficacy (Engstrand & Lise, 2014). More recently, Sanini and Bosa (2015) conducted a case study to investigate one teacher's beliefs and self-efficacy in teaching children with ASD by using an interview. They found that the particular teacher in their study held a low level of self-efficacy of teaching ASD students because she was not confident in her teaching practice of ASD students and did not believe that she received adequate knowledge and skills in teaching children with ASD during her pre-service training (Sanini & Bosa, 2015).

Some researchers explored the self-efficacy of teachers of students with ASD by including other factors, such as teachers' working experience of teaching children with ASD and teacher burnout (Corona, Christodulu, & Rinaldi, 2016; Jennett, Harris, & Mesibov,

2003; Ruble et al., 2011). For example, Ruble and colleagues (2013) found that teachers'

self-efficacy in teaching children with ASD was negatively correlated to teachers' burnout,

and there was no statistically significant correlation between teacher self-efficacy and teacher

working experience (Ruble, Toland, Birdwhistell, McGrew, & Usher, 2013). Later research

conducted by Corona and colleagues highlighted the importance of providing consistent

training to teachers working with students with ASD. They suggested that consistent training

was an effective way to enhance teachers' self-efficacy in teaching ASD students (Corona et

al., 2016).

In conclusion, even though previous studies of teacher knowledge and teacher beliefs

about children with ASD are informative, there is no clear answer in terms of how teacher

beliefs and knowledge influence their interactions with children with ASD. However, such

empirical study is needed as teacher expectations, teacher knowledge, teacher beliefs, and

teacher self-efficacy are directly associated with teaching practice and ASD children's

learning. Hence, the current thesis will attempt to explore the possible relations between

those variables.

Teacher Expectations about Students with ASD

Even though some studies exist regarding teacher expectations for children with

different kinds of special needs, the number of studies focusing on teacher expectations for

children with ASD is few. Previous studies of teacher expectations for children with special

needs, including students with learning disabilities (Ferri, Keefe, & Gregg, 2001; Osterholm

et al., 2007; Woodcock & Vialle, 2011), students with mental retardation (Wehmeyer, 2003),

students with Down syndrome (Gilmore et al., 2003), deaf students (Lane, Hoffmeister, &

Bahan, 1996; Spencer & Marschark, 2010), and for students with cerebral palsy (Peeters,

Verhoeven, & de Moor, 2009) have consistently found that teachers tend to hold low

expectations for these students. Teachers' low expectations may influence the learning opportunities that they provide to these students and the ways in which they interact with ASD students. Teachers may provide less challenging academic activities to these students in writing or reading (Peeters et al., 2009) and provide less informative feedback to them than typically developing students (Clark, 1997; Woodcock & Vialle, 2011). Consequently, learning for these students may be impeded.

With regard to teacher expectations for students with ASD, Ivey's research is worth noting. Ivey (2007) investigated 15 teachers and their expectations for ASD students' future outcomes in terms of the importance and likelihood of achieving particular outcomes. She found that teachers held different expectations for their ASD students in relation to these two aspects. For example, teachers rated physical safety as the highest and most important aspect of ASD students' future lives and rated continuing study as the most likely aspect to occur in the future. In addition, teachers showed positive attitudes regarding what was important for students' future outcomes rather than what is more likely to happen in the future for the students; for example, teachers believed that it was important for their ASD students to have a job, but they did not believe that their students would be able to get a job. It seemed that although these teachers valued some important aspects or goals in their students' future development, they did not believe that their students were able to achieve these goals (Ivey, 2007). Those different expectations and perceptions may relate to the teachers' efforts in helping their students achieve certain goals, which can be represented by teachers' different behaviours in daily teaching that likewise have different impacts on ASD students' learning.

More recently, Witmer and Ferreri (2014) examined teachers' academic expectations for children with ASD as a part of their research. A group of 191 professionals, including special education teachers, general education teachers, consultants, and paraprofessionals, were asked to rate the extent to which individual students with ASD were expected to achieve

the same academic goal as their typically developing peers at their grade level. They found that nearly one-third of teachers did not have academic expectations for their students with ASD while the rest of them expected their students to achieve at least a few of the goals. In addition, teacher expectations for students' academic achievement varied with their grade level. Specifically, elementary school teachers were more likely to expect ASD pupils to achieve most of their academic goals, whereas middle or high school teachers did not expect ASD students to achieve the academic goals. The study suggested that teachers held low academic expectations for students with ASD. Consequently, many students received very few instructions in accordance with the general curriculum, and teachers used alternative assessment to test students' academic achievement (Witmer & Ferreri, 2014).

Findings from previous studies have indicated that teachers held overall low expectations for students with different types of disabilities, which may be detrimental to the long-term development of those children. These findings have some implications for the current study. Given that many children with ASD have other disabilities, as previously mentioned, it seems likely that teachers may hold low expectations for children with ASD. If this is true, the situation could be detrimental to these children, because their development could be negatively influenced by teachers' low expectations. In this regard, examining the relations between teacher expectations and ASD children's academic achievement and social development has become urgent, because it is necessary to ensure that those children "are provided with the best education" (The New Zealand Disability Strategy, 2011, p. 2).

Although there have been two informative studies focusing on teacher expectations for students with ASD (Ivey, 2007; Witmer & Ferreri, 2014), they either focused on teacher expectations for ASD students' future outcomes, or emphasised teachers' general academic expectations, which makes it difficult to generalise from the findings to teacher expectations

for individual ASD students in both academic and social areas. However, compared with the existing research, exploring both teachers' academic expectations and their social expectations for children with ASD seems more imperative because it directly links with the daily learning of those children, which forms a basis for their future development. Future studies exploring teacher expectations for children with ASD in terms of their academic achievement and social development should be encouraged.

The Current Research

The current thesis aims to extend teacher expectancy research to a comparatively new field that has not been deeply explored in previous research; that is, teacher expectations for children with ASD. Teachers' reading expectations and social expectations were investigated, along with factors related to teacher expectations. Those factors included teachers' autism-specific knowledge, teacher beliefs about autism teaching, teachers' self-efficacy in teaching children with ASD, and the ways in which teachers interacted with ASD students in the classroom. Exploring teacher expectations and relevant factors may help in understanding the possible relations between teacher expectations and the academic achievement and social development of ASD students. Accordingly, this thesis comprises four studies.

The first study investigated what knowledge teachers had about autism and examined whether teachers' autism-specific knowledge varied with the teachers' role (working as special education teachers or general education teachers), teachers' experience working with ASD students, and teachers' gender. It was predicted that teachers would hold both accurate knowledge and misconceptions about children with ASD, and teachers' autism-specific knowledge would vary with their demographic characteristics. The research findings of this study may contribute to understanding the relations between teacher knowledge and teacher expectations.

The second study explored the expectations teachers had for individual students with ASD in terms of their academic achievement and social development, and aimed to discover whether there were teachers who had higher expectations for their ASD students than their counterparts. Study Two also examined whether there was a relationship between teachers' academic expectations and social expectations. It was predicted that teachers would have different social and reading expectations for individual ASD students, and teachers' academic expectations for a particular student would relate to teachers' social expectations for him/her. It was also predicted that some teachers would predict greater progress for their ASD students than other teachers. The findings of this study may add knowledge in the teacher expectancy field about teacher expectations for children with ASD.

The third study investigated teachers' beliefs about teachers' self-efficacy in teaching children with ASD. It was predicted that teachers who predicted greater progress for their ASD students identified in Study Two would differ in their beliefs and self-efficacy from their counterparts who predicted less progress for their ASD study in Study Two. Teachers' different beliefs may result in different learning opportunities being provided to students with ASD. If such differences were found, the findings would contribute to understanding of the role of teacher beliefs in teacher expectations.

The final study of this thesis explored the instructional behaviours of teachers based on their expectations for individual students. Teachers' verbal behaviours towards individual ASD students were analysed and compared. It was predicted that teachers' behaviours would vary with their expectations. The research findings of this study were designed to provide new evidence of the relations between teacher expectations and teacher behaviours.

The next chapter (Study One) will explore teachers' autism-specific knowledge. The research method for Study One will be presented first and then the findings of the study. It will end with a discussion related to the findings of Study One.

Chapter Three

Study One: Investigating Teacher Knowledge with Respect to Autism

Study One was designed to investigate teachers' autism-specific knowledge among a wide range of teachers in Auckland, New Zealand. The relationship between teachers' demographic characteristics and teachers' knowledge was the focus of the present study; they had not been explored previously in the New Zealand context. Based on the research in other contexts (e.g., the United States, Greece, and Malaysia), it was predicted that teachers would possess some accurate knowledge and have some misconceptions with regard to autism. It was further predicted that teachers' autism-specific knowledge would be influenced by their demographic characteristics. The research questions for this study were:

1. What knowledge do teachers have about students with autism spectrum disorder (ASD)?

2. Are there significant group differences between special education teachers and general education teachers regarding their knowledge of autism?

3. Are there significant group differences between teachers' teaching experience with students with ASD and teachers' knowledge?

4. Are there significant group differences between male teachers and female teachers regarding their knowledge of autism?

Method

Participants

The participants in this study were 270 teachers from four special education schools and 12 mainstream schools (primary schools and intermediate schools) serving children with ASD. Among the 270 teachers, 11 were excluded because they completed less than 30% of

the scales and did not provide demographic information. Of the 259 remaining respondents, 170 were general education teachers (65.6%), 75 were special education teachers (29.0%), 5 were licensed therapists (1.9%) and 9 were administrators or principals (3.5%). Moreover, nearly 82% respondents ($n = 212$) were female whereas the remainder were male. The age of the respondents ranged from 21 to 73 years with a mean age of 42.57 ($SD = 11.95$ years). The majority of teachers ($n = 232$) reported that they had had experience teaching children with ASD. The demographic information of the respondents is summarised in Table 1.

Table 1

Demographic Characteristics of the Participants

	General education teachers		Special education teachers	
	n	%	*n*	%
	179	70%	80	30%
Gender				
Male	32	18%	15	19%
Female	147	82%	65	81%
Teaching experience				
No experience	27	15%	0	0%
1–5 years	76	42%	19	24%
6–14 years	46	26%	41	51%
15+ years	30	17%	20	25%

Measures

The Autism Survey by Swiezy and colleagues (2005) was used in the study to measure professionals' knowledge and beliefs about autism. The initial version of the Autism

Survey was a 23-item scale developed to explore different professionals' knowledge and beliefs about autism in terms of social and emotional features, cognitive characteristics, general descriptive features, and diagnostic criteria of children with ASD. Confirmatory factor analysis conducted by Campbell and colleagues (1996) indicated that the scale measured a single variable, teacher knowledge and beliefs about autism. Swiezy and colleagues (2005) modified the original version into a 20-item scale for the purpose of reflecting the current knowledge of autism more accurately (Gardiner & Iarocci, 2014).

Both versions of the Autism Survey have been adopted in several studies (Gardiner & Iarocci, 2014; Heidgerken et al., 2005; Talib & Paulson, 2015). The reliability and validity of the original version has been shown to be reasonable as the coefficient alpha was .72. (Campbell, et al., 1996; Gardiner & Iarocci, 2014; Schwartz & Drager, 2008) and preliminary analyses regarding the reliability and validity of the updated version were stated by the author as indicating that they were at an appropriate level (Campbell, 2008), although the specific reliability data was not provided. According to Ables and colleagues (2011), the updated version of the survey included five categories, which were etiology, diagnosis, interventions, treatments, and outcomes (Ables, Ashby, & Swiezy, 2011). At the end of the survey, teachers' demographic information including teachers' age, gender, role (special education teacher, general education teacher, licensed therapists, and principal or administrator) and experience in regard to teaching children with ASD (teachers were provided with several choices in terms of the years of experience of teaching children with ASD) were collected.

The main reasons this scale was chosen were because the Autism Survey, especially the original one, had been adopted or adapted by several researchers (e.g. Campbell, et al., 1996; Heidgerken et al., 2005; Helps et al., 1999) and the survey has been revealed to be sensitive in relation to the differential perspectives of autism by various professionals (as

discussed in the literature review). The survey was developed to examine and explore the effects of different professional training backgrounds on knowledge and beliefs regarding autism (Stone, 1987). Papers published from the original survey have typically compared different groups of professionals against expert (autism specialists) views on their knowledge and beliefs about autism, at an item level, in order to identify specific areas where there are misconceptions and outdated beliefs about autism, and to highlight areas where professional education might be needed. These aims coincided with the main research purpose of the current study.

In addition, although a few scales have been developed to explore teachers' knowledge of autism, they were either developed within a specific context (e.g., Hendricks, 2011) or were used only once for a specific study (e.g. Helps et al., 1999; Mavropoulou & Padeliadu, 2000). This made them less useful for further research. Given that the current study aimed to preliminarily understand teachers' views regarding their knowledge and beliefs about autism and its implications for teacher education, the Autism Survey was adopted for this study. In order to enable further comparison, following the methodology used in previous studies (e.g., Ables et al., 2011; Heidgerken et al., 2005; Helps et al., 1999; Stone & Rosenbaum, 1988), this study mainly focused on analysing data at the item level.

Each item was rated on a 6-point Likert-type scale from (1) fully agree to (6) fully disagree (Stone, 1987). Participant responses 1 to 3 represented agreement to varying degrees whereas 4 to 6 represented increasing disagreement with the statement. As most of the items in the survey reflected opinion and attitudes, the ideal responses from Ables and colleagues' research (2011) were adopted as a standard to judge which items reflected facts and which items reflected misconceptions. The ideal responses were provided by the specialists who worked in the Christian Sarkine Autism Treatment Centre (Ables et al., 2011). According to the ideal response, 10 items in the survey were true beliefs, while the other 10

items were misconceptions. Those items indicating accurate beliefs and those showing

misconceptions are shown in Table 2, along with their means and standard deviations.

Table 2

The Mean and Standard Deviation of Each Item for the Total Sample

Item (Misconceptions)	n	M	SD	Item (Facts)	n	M	SD
1 .Autism is an emotional disorder.	258	4.03	1.59	2. Early intervention can lead to significant gains in children's social and communication skills.	259	5.24	.98
3. All children with autism display poor eye contact.	257	3.73	1.30	4. Children with autism typically perform better in visual presented tasks than verbal presented ones.	258	4.66	1.06
7. Children with autism do not show attachments.	259	4.25	1.30	5. Social problems in autism are different from other psychiatric conditions.	251	4.32	1.02
9. Children with autism are deliberately uncooperative.	258	5.12	2.58	6. Autism is more frequently diagnosed in males than in females.	253	4.52	1.23

10. The first concerns of autism were related to the child's social behavior.	255	2.61	1.02	8. Sensory integration therapy is an effective treatment for autism and its symptoms.	227	4.21	.97
12. We now have treatments that can cure autism.	255	5.00	1.02	11. Autism tends to run in families.	250	3.50	1.34
14. There is one approach/program that works for all children with autism.	258	5.29	1.08	13. Children with autism can grow up to live independently.	257	4.75	1.11
16. Autism occurs more commonly among higher socioeconomic and educational levels.	252	5.05	1.09	15. All children diagnosed with autism receive some form of special education services at school.	258	4.92	1.14
18. Most children diagnosed with autism eventually outgrow the disorder.	257	4.92	1.06	17. Autism can be diagnosed as early as 18 months.	231	4.17	1.15

19. Children with autism do not show affection.	258	4.75	1.14	20. The need for routines and sameness is one of the earliest behavioral features of autism.	255	4.72	.97

Procedure

Based on the information from the ERO report for a number of different schools of the Education Review Office website, the researcher found schools that had been providing special education or inclusive education for students with special needs. The researcher then sent e-mails to as many principals as possible. With the principals' consent and according to the principals' suggestions, hard copies of the questionnaires were sent to the principals or administrators. The principals or administrators distributed the questionnaires to teachers and collected them on behalf of the researcher. The researcher collected the questionnaires from the principals or administrators once they had been completed. Initially, of the 325 questionnaires that were distributed, 270 were returned (83% response rate), which is considered an acceptable level (Chafouleas, Riley-Tillman, & Sassu, 2006).

Data Analysis

Data were analysed using the statistical software SPSS version 22.0 (International Business Machines, 2013). The demographic information was analysed descriptively (means and standard deviations). Given that the number of licensed therapists, administrators and principals was quite small, and given that total mean scores of the 20 items were quite similar between special education teachers (93.37), licensed therapists (94.36), and administrators and principals (93.34), the study compared whether there was a statistically significant difference between those groups by employing a Kruskal-Wallis test. No statistically significant difference was found between special education teachers, licensed therapists and principals and administrators in terms of their knowledge of autism. Therefore, this research combined special education teachers, licensed therapists, and principals and administrators into the same group, namely, the special education teachers' group ($n = 89$). Accordingly, there were 170 teachers in the general education teachers' group. In addition, teachers who had varying teaching experience with ASD were categorised into four groups (no experience,

1–5 years of experience, 6–14 years of experience, and more than 15 years of experience) for the purposes of further analysis (Hendricks, 2007, 2011).

The differences in teacher knowledge about ASD by teacher role or gender were calculated by using a Mann-Whitney U test because items were responded to on an ordinal scale (Pallant, 2013) and there was some evidence of non-normality of the data (Ables et al., 2011; Helps et al., 1999). The differences in means between teaching experience and teacher knowledge of ASD were calculated using the Kruskal-Wallis test, followed up with post hoc analyses which were carried out using the Mann-Whitney U test.

Missing Data

Prior to data analysis, missing data were inspected. Although there was no attrition across the participants, there were some missing data for some participants. In addition, since some participants marked "I do not know" as their answer for the particular items, the "I do not know" answers were marked manually by the researcher, and then coded as missing data. The missing data ranged from .04% to 12.4% (at the item level). Little's (1988) test was employed to assess whether the missing data were missing completely at random (MCAR). The results showed that the data were MCAR ($\chi^2 = 859.749$, $df = 798$, $p = .064$). In other words, the missing data were missing at random. Hence, the missing data were imputed by applying the Expectation Maximization (EM) method which is particularly efficient for procedures such as internal consistency calculations and exploratory factor analysis (Graham, Hofer, & MacKinnon, 1996; Schlomer, Bauman, & Card, 2010). Subsequently, the researcher recoded the "I do not know" as missing data based on the manual mark. In this way, the real missing data were imputed while the "I do not know" was kept, which is analogous to the technique employed in Von Hippel's study (2007). In other words, all the missing data represented "I do not know" responses at this stage. The recoded missing data

from the "I do not know" response ranged from .04% to 6.6% (at the item level), with a mean of 1.32%, or 29 out of 259 cases (11.2% of participants) were shown to have missing data.

Reliability

Although previous research had mentioned that preliminary analysis of the reliability of the updated version of the Autism Survey was at an acceptable level (Campbell, 2008), no studies have actually reported the figures regarding the reliability. The current study used Cronbach's alpha correlational analyses to assess the internal consistency of the Autism Survey. As the survey included both true and untrue statements, following Campbell and colleagues' (1996) suggestion, the 10 true items were reverse-scored for the purpose of calculating the total score. Consequently, higher scores were then on the same scale and reflected more accurate knowledge and beliefs about autism. For the total score an alpha coefficient of .67 was obtained. Based on the information provided in the item-total correlations and alphas (if the items were deleted) for each item, two items with low values were excluded (items 10 and 11). The exclusion of those two items improved the internal consistency of the survey to an acceptable level ($\alpha = .712$).

Factor Analysis

To determine whether the updated Autism Survey constituted distinct factors, an exploratory factor analysis was conducted on the total sample. Specifically, the maximum likelihood method along with an oblique rotation was employed to extract the factors. However, no clear factors were revealed. This suggested that the updated survey only investigated one factor regarding knowledge and beliefs about autism, which corresponded to the intention of the original version (Campbell et. al., 1996).

Results

Overview

Prior to conducting further comparisons, the descriptive data (means and standard deviations) were calculated for all participants at the item level. The results (see Table 2) revealed that participants held some accurate knowledge and some misconceptions about children with ASD when using Able and colleagues' study (2011) as a standard. Specifically, the majority of teachers held accurate knowledge in terms of "Early intervention can lead to significant gains in children's social and communication skills" ($M = 5.24$, $SD = .98$). Meanwhile, most teachers did not agree with four inaccurate statements. Specifically, they did not agree that "Children with autism are deliberately uncooperative" ($M = 5.12$, $SD = 1.09$); "We now have treatments that can cure autism" ($M = 5.00$, $SD = 1.19$); "There is one approach/program that works for all children with autism" ($M = 5.29$, $SD = 1.08$); and "Autism occurs more commonly among higher socioeconomic and educational levels" ($M = 5.05$, $SD = 1.09$). It seemed that teachers tended to have more accurate knowledge for those items, which mainly related to general information about intervention and treatment.

In contrast, teachers tended to hold some degree of misconception in relation to the remaining items, especially in terms of "Autism tends to run in families" ($M = 3.50$, $SD = 1.34$) and "Most parents/caregivers of children with autism report their first concerns were related to the child's social behaviour" ($M = 2.61$, $SD = 1.02$). Meanwhile, nearly 5% of participants seemed to be unsure about (as they responded "I do not know" as their answers) "Research indicates that sensory integration therapy is an effective treatment for autism and its symptoms" ($M = 2.79$, $SD = .97$), and 6% of them seemed to be unsure about "Autism can be diagnosed as early as 18 months" ($M = 2.84$, $SD = 1.15$), which mainly related to etiology and treatment.

80

Group Differences between Teachers' Role and Teachers' Knowledge

Special education teachers and general education teachers held different views for more than half the total items. The mean of each item is presented in Table 3. As can be seen, 11 of 20 items showed statistically significant differences between special education teachers and general education teachers. Special education teachers held more accurate knowledge than general education teachers in terms of "Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally" U = 5210.50, z = -4.264, $p < .001$, "We now have treatments that can cure autism" U = 4816.00, z = -4.874, $p < .001$, "Autism can be diagnosed as early as 18 months" U = 4383.50, z = -4.708, $p < .001$, "With the proper treatment, most children with autism eventually outgrow the disorder" U = 4894.50, z = -4.765, $p < .001$.

Statistically significant differences were also found in terms of "All children with autism display poor eye contact" $U = 6154.00$, z = -2.327, $p < .05$, "Children with autism do not show attachments, even to parents/caregivers" $U = 6271.00$, z = -2.317, $p < .05$, "Early intervention can lead to significant gains in children's social and communication skills" $U = 5804.50$, z = -3.358, $p < .05$, "Autism is more frequently diagnosed in males than in females" $U = 5.501.50$, z = -3.478, $p < .05$, "It is important that all children diagnosed with autism receive some form of special education services at school" $U = 6014.00$, $z = -2.846$, $p < .05$, "Children with autism are deliberately uncooperative" $U = 5934.50$, $z = -2.994$, $p < .05$, "Autism occurs more commonly among higher socioeconomic and educational levels" $U = 5794.50$, $z = -2.801$, $p < .05$. Overall, the responses from the special education teachers compared with those of the general education teachers were closer to the experts' ideal response as described in Ables and colleagues' study (2011). Given that the ten true statements were reversed in the current study, the relevant ideal responses were reversed for the purpose of enabling further comparison.

Table 3

Comparison of Mean Statement Ratings by Special Education Teachers and General Education Teachers and the Ideal Responses

Item (Misconceptions)	Ideal	General	Special	Item (Facts)	Ideal	General	Special
1 .Autism is an emotional disorder.	6	3.91	4.27	2. Early intervention can lead to significant gains in children's social and communication skills.	6	5.12	5.47*
3. All children with autism display poor eye contact.	6	3.58	4.02*	4. Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally.	6	4.49	4.97**
7. Children with autism do not show attachments.	6	4.13	4.47*	5. Social problems in autism are different from other psychiatric conditions.	6	4.30	4.38
9. Children with autism are deliberately uncooperative.	6	5.02	5.31*	6. Autism is more frequently diagnosed in males than in females.	6	4.40	4.74**

Item	N			Item	N		
10. The first concerns of autism were related to the child's social behaviour.	6	2.68	2.48	8. Sensory integration therapy is an effective treatment for autism and its symptoms.	6	4.15	4.33
12. We now have treatments that can cure autism.	6	4.78	5.42**	11. Autism tends to run in families.	6	3.53	3.44
14. There is one approach/program that works for all children with autism.	6	5.24	5.37	13. Children with autism can grow up to live independently.	6	4.78	4.70
16. Autism occurs more commonly among higher socioeconomic and educational levels	6	4.91	5.30*	15. All children diagnosed with autism receive some form of special education services at school.	6	4.80	5.20**
18. Most children diagnosed with autism eventually outgrow the disorder.	6	4.25	5.30**	17. Autism can be diagnosed as early as 18 months.	6	3.97	4.54*

19. Children with autism do not show affection.	6	4.67	4.90	20. The need for routines and sameness is one of the earliest behavioural features of autism.	6	4.64	4.87

Note: * *p* < .001. ** *p* < .05

Group Differences between Teachers' Teaching Experience and Teachers' Knowledge

Regardless of teaching experience with children with ASD, teachers were in agreement for 70% of the items. However, they held different views in relation to six items (see Table 4). Statistically significant differences were found for "Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally" χ^2 (3, 259) = 8.158, p < .05, "Autism is more frequently diagnosed in males than in females" χ^2 (3, 259) = 11.671, p < .05, "Children with autism are deliberately uncooperative" χ^2 (3, 259) = 9.801, p < .05, and "Autism can be diagnosed as early as 18 months" χ^2 (3, 231) = 10.877, p < .05.

Table 4

Teaching Experience with Significant Differences and Post-hoc Mann-Whitney U Test

	Kruskal Wallis test			Mann-Whitney U test (Mean Rank)		
Item	Chi-Square	Sig.	No experience	1–5 years	6–14 years	15+ years
2. Early intervention can lead to significant gains.	11.671	.009		98.96*		83.35*
4. Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally.	8.185	.043	46.80*			37.19*
6. Autism is more frequently diagnosed in males than in females.	10.903	.012	47.24*			34.55*
9. Children with autism are deliberately	10.158	.017	27.58*			41.46*

uncooperative.

11. Autism tends to run in families.	7.923	.048		61.01**	77.27*
17. Autism can be diagnosed as early as 18 months.	10.502	.015	69.10*		53.06*

Note: * *p* < .001. ** *p* < .05

To find out which groups were statistically different from one another, follow-up Mann-Whitney U tests were employed because no post hoc option has been developed for comparing unequal sample sizes in the Kruskal-Wallis test (Rubie-Davies, 2007). In order to control for Type 1 errors (Field, 2009; Pallant, 2013), and to present the results clearly, the researcher selected only two key groups to compare for each item. Although several statistical tests were conducted, the conservative Bonferroni adjustment was not employed for this study. This was mainly because the Bonferroni adjustment has been criticised by different researchers from different disciplines because of low statistical power (Bennett, 2001; Biederman et al., 2014; Garamszegi, 2006; Nakagawa, 2004). Therefore, statistical significance was determined at p < 0.05, which was analogous to Biederman and colleagues' study (Biederman et al., 2014). The intentional comparisons were conducted to compare the groups with the highest mean rank and the lowest mean rank for each item because the differences between those two groups showed the largest differences in terms of mean rank scores among groups. For those four items, the group with the highest mean rank and the lowest mean rank were teachers with more than 15 years of experience and teachers with no experience of teaching children with ASD respectively. The results showed that there was a statistically significant difference with regard to "Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally" between teachers with no experience with children with ASD ($Md = 3.00$, $n = 27$) and teachers with more than 15 years of experience with children with ASD ($Md = 2.00$, $n = 50$), $U = 464.5$, $z = -2.350$, $p < .05$.

Similar results were found in terms of "Autism is more frequently diagnosed in males than females" in which teachers with no experience working with children with ASD ($Md = 3.00$, $n = 27$) were significantly different statistically when compared with teachers with more than 15 years of experience working with children with ASD ($Md = 2.00$, $n = 50$) $U =$

452.5, $z = -2.444$, $p < .05$, "Children with autism are deliberately uncooperative" in which teachers with no experience of working with children with ASD ($Md = 5.00$, $n = 26$), were significantly different to teachers with more than 15 years of experience ($Md = 6.00$, $n = 50$) $U = 404$, $z = -2.940$, $p < .05$, and "Autism can be diagnosed as early as 18 months" in which teachers with no experience ($Md = 4.00$, $n = 26$) were significantly different to teachers with more than 15 years of experience ($Md = 5.00$, $n = 47$) $U = 441$, $z = -2.026$, $p < .05$.

The statistically significant differences among groups were also found in terms of "Problems with social relatedness that are present in autism are different from social problems seen in other psychiatric conditions" χ^2 (3, $n =259$) = 8.207, $p < .05$. "Early intervention can lead to significant gains in children's social and communication skills" χ^2 (3, $n =259$) = 11.671, $p < .05$. In order to find out which of the groups were statistically different from one another, the same comparing technique was applied (comparing the groups with the highest and lowest mean rank among groups) to reveal that the mean ranks of scores were significantly different between teachers with less than 5 years of experience and teachers with more than 15 years of experience. The follow-up Mann-Whitney U test revealed a statistically significant difference between teachers with less than 5 years of experience ($Md = 4.00$, $n = 93$) and teachers with more than 15 years of experience ($Md = 5.00$, $n = 50$) in terms of "Problems with social relatedness that are present in autism are different from social problems seen in other psychiatric conditions" $U = 1750$, $z = -2.551$, $p < .05$. It also revealed the significant difference between teachers with less than 5 years of experience ($Md = 5.00$, $n = 95$) and teachers with more than 15 years of experience ($Md = 6.00$, $n = 50$) in terms of "Early intervention can lead to significant gains", $U = 1673$, $z = -3.171$, $p < .05$. Similar to Able and colleagues' study (2011), teachers with more than 15 years of experiences tended to be more knowledgeable in comparison to their counterparts with less than 5 years of experience or no experience with children with ASD.

Group Differences between Teachers' Gender and Teacher Knowledge

Although male and female teachers seemed to hold similar views for 75% of all items, they held different knowledge for the remaining 25%. The differences existed with regard to "Autism is more frequently diagnosed in males than in females" $U = 3148.5$, $z = -3.793$, $p < .001$, "With the proper treatment most children diagnosed with autism eventually outgrow the disorder" $U = 3344.00$, $z = -3.457$, $p < .05$, "Children with autism are deliberately uncooperative" $U = 3808$, $z = -2.674$, $p < .05$, "Autism tends to run in families" $U = 3859.50$, $z = -2.146$, $p < .05$, and "Autism is an emotional disorder" $U = 3756.5$, $z = -2.672$, $p < .05$. Female teachers were more knowledgeable than male teachers since their responses were more close to the ideal response in Able's study (2011).

Table 5

Comparison of Mean Statement Ratings by Male Teachers and Female Teachers

Item (Misconceptions)	Ideal	Male	Female	Item (Facts)	Ideal	Male	Female
1 .Autism is an emotional disorder.	6	3.51	4.16**	2. Early intervention can lead to significant gains in children's social and communication skills.	1	5.15	5.26
3. All children with autism display poor eye contact.	6	3.70	3.75	4. Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally.	1	4.34	4.73*
7. Children with autism do not show attachments.	6	4.20	4.27	5. Social problems in autism are different from other psychiatric conditions.	1	4.30	4.33
9. Children with autism are deliberately uncooperative.	6	4.80	5.22*	6. Autism is more frequently diagnosed in males than in females.	1	3.89	4.66**

10. The first concerns of autism were related to the child's social behaviour.	6	2.42	2.65	8. Sensory integration therapy is an effective treatment for autism and its symptoms.	1	4.06	4.25
12. We now have treatments that can cure autism.	6	4.72	5.07	11. Autism tends to run in families.	1	3.11	3.58*
14. There is one approach/program that works for all children with autism.	6	5.15	5.32	13. Children with autism can grow up to live independently.	1	4.62	4.78
16. Autism occurs more commonly among higher socioeconomic and educational levels	6	4.83	5.09	15. All children diagnosed with autism receive some form of special education services at school.	1	4.89	4.93
18. Most children diagnosed with autism eventually outgrow the disorder.	6	4.47	5.03*	17. Autism can be diagnosed as early as 18 months.	1	4.07	4.20

| 19. Children with autism do not show affection. | 6 | 4.53 | 4.80 | 20. The need for routines and sameness is one of the earliest behavioural features of autism. | 1 | 4.60 | 4.75 |

Note: * *p* < .001. ** *p* < .05.

Discussion

The current study was conducted to extend the research with regard to teachers' knowledge of ASD. More specifically, this study aimed to provide a preliminary evaluation of the knowledge professionals possess, in Auckland, New Zealand, especially special education teachers and general education teachers. The Autism Survey was used to explore teachers' knowledge of children with ASD and to reveal the areas in which teachers harboured misconceptions or outdated beliefs. It also explored whether teachers with different demographic characteristics (gender, teaching experience) would possess different knowledge about autism.

Overview of Teachers' Autism Specific Knowledge

The majority of the respondents possessed accurate knowledge for five items while holding some degree of misconception for the remainder. On the one hand, most participants acknowledged the significant role of early intervention in children with ASD, which has been advocated for and supported by researchers (Boyd, Odom, Humphreys, & Sam, 2010; Corsello, 2005; Dawson & Osterling, 1997; Fernell et al., 2011). On the other hand, the majority of participants disagreed with four untrue items. For example, most teachers in the current study seemed to believe that students with ASD could not be cured. This was analogous with other studies in which both general education teachers and special education teachers in Greece (Mavropoulou & Padeliadu, 2000) and Oman (Al-Sharbati et al., 2015) held similar accurate knowledge regarding this aspect. In addition, most teachers appeared to have accurate perceptions in terms of the social and interactional characteristics of autism.

94

They understood that individual students with ASD may vary in their interventional needs

because they recognised that ASD students' misbehaviour was related to their autism

characteristics (rather than their intentional purpose) and they believed that different teaching

programmes may benefit different individual students. Consistent with other research, the

majority of teachers in the present study did not possess the misconception about children

with ASD and their family socioeconomic background (Al-Sharbati et al., 2015). Overall,

most teachers tended to possess some knowledge about the treatment, intervention and

characteristics of autism.

In contrast, there were some misconceptions among teachers, especially in terms of

whether autism runs in the family. In addition, a handful of teachers appeared uncertain

about the earliest diagnosis time. Since this knowledge may not necessarily be related to

teaching, this may account for some participants lacking knowledge about these aspects of

ASD. However, given that teachers may not be able to clearly understand the causal process

of ASD students if they do not have the necessary etiological knowledge about autism (Bailey

et al., 1996), having relevant knowledge may help teachers have more comprehensive

perceptions about autism and, in turn, enable them to work with ASD students more

effectively. Furthermore, teachers' confusion regarding parents' first concern and teachers'

lack of knowledge about sensory integration may reveal that teachers did not fully understand

the core characteristics of autism and some existing teaching and intervention programmes.

Because teachers may not be able to provide appropriate services to students with ASD if

they do not have accurate knowledge about them (Simpson, 2004), lack of knowledge is undesirable.

The Relations between Teacher Knowledge and Teacher Role

Special education teachers' mean scores were significantly higher than general education teachers' for more than half the items. This showed that special education teachers were more likely to possess more accurate knowledge about ASD than their general education counterparts, which was consistent with previous studies (Haimour & Obaidat, 2013; Helps et al., 1999; Mavropoulou & Padeliadu, 2000; Segall & Campbell, 2012). However, when teachers were asked to list three core features of children with ASD, York and colleagues (1999) found that special education teachers and general education teachers shared similar levels of knowledge (York et al., 1999), which may reveal that special education teachers may be more knowledgeable about some misconceptions related to autism than their general education counterparts. In other words, special education teachers appeared to possess a wider knowledge regarding autism (Mavropoulou & Padeliadu, 2000).

In addition, although special education teachers appeared to be more knowledgeable than general education teachers in terms of their knowledge regarding autism, this did not mean that special education teachers all held accurate knowledge. Similar to Mavropoulou and Padeliadu's study, both general education and special education teachers were confused by some items (Mavropoulou & Padeliadu, 2000). For example, both types of teachers were confused by whether autism is inclined to run in families. Considering autism has proven to be related to genetic and environmental factors (D'Amelio et al., 2005; Landrigan, 2010),

96

teachers may still hold some misconceptions if they have not received the most current and up-to-date knowledge and information regarding causation.

General education teachers seemed to hold misconceptions about gender differences in terms of the prevalence of autism. This was analogous with some studies which showed that most special education teachers knew that more boys than girls are identified as having ASD (Toran, Westover, Sazlina, Suziyani, & Nigd Hanafi, 2016), whereas only a few general education teachers held correct knowledge about this (Al-Sharbati et al., 2015). However, this research finding was unexpected because previous research has shown that both special education teachers and general education teachers held accurate views that males with ASD outnumbered females with ASD (Mavropoulou & Padeliadu, 2000; Wing, 1996). It was also unexpected that general education teachers were more likely to harbour outdated beliefs that children with ASD were more commonly found in upper-class families and that children with ASD did not show social attachment to people around them, which have been clarified in earlier research (Cohen, Paul, & Volkmar, 1986; Stone, 1987). In addition, similar to pre-service teachers (Barned et al., 2011) and general education teachers (Al-Sharbati et al., 2015) in earlier studies, general education teachers tended to disagree that autism was a lifetime disability because they believed that individuals with ASD would outgrow the disorder. Likewise, general education teachers in the current study misbelieved that children with ASD do not show eye contact with others, which was analogous with the relevant findings of the previous study (Toran et al., 2016). However, researchers have reached the

consensus that ASD students do show eye contact with others (Lutchmaya, Baron-Cohen, & Raggatt, 2002; Phillips, Baron-Cohen, & Rutter, 1992; Senju & Johnson, 2009).

Except for those misconceptions or outdated beliefs, some general education teachers still harboured some degree of misunderstanding with regard to the diagnosis, intervention and possible outcomes for children with ASD. For example, some of them did not believe that children with ASD would perform better when tasks were presented visually than when tasks were presented verbally. Such misconceptions may result in undesirable impacts for children with ASD and teachers working in mainstream schools. General education teachers may be less likely to facilitate inclusion for children with ASD if they are not knowledgeable in terms of basic teaching strategies for those students (Dahle, 2003; Fisher, Frey, & Thousand, 2003), which could not only negatively influence ASD students' learning (Razali, Toran, Kamaralzaman, Salleh, & Yasin, 2013), but also relate to teachers' self-efficacy in teaching children with special needs (McCray & McHatton, 2011), including children with ASD.

Furthermore, the different levels of knowledge that special education teachers and general education teachers had may also influence the instruction they provided for children with ASD. Previous studies have shown that special education teachers were more goal-oriented and were more likely than their general education counterparts to provide instruction in all the areas in which ASD students may have difficulties (Mavropoulou & Padeliadu, 2000). In contrast, general education teachers were inclined to focus on students' social skills and well-being, which may lead general education teachers to cater for the educational needs

98

of those children less effectively (Mavropoulou & Padeliadu, 2000). Although the current study did not examine the relation between teacher knowledge and teacher instruction among general and special education teachers, the research cited above suggests that teacher knowledge may play a role in influencing teachers' teaching practice.

The question arises as to why general education teachers and special education teachers had different levels of knowledge regarding autism. One possible reason that special education teachers appeared to possess more accurate knowledge with regard to autism than general education teachers is the different training programmes. It is reasonable that special education teachers were more likely to acquire more specific knowledge about autism in their universities or colleges than their general education counterparts. Another possible reason could be that special education teachers have more in-service training related to children with special needs and they may also be more inclined to seek out knowledge about children with special needs given the focus of their teaching. However, the confusions about autism exhibited by special education teachers may be indicative that even the training programmes for special education teachers are not adequate. Although this study has not collected data regarding teachers' training, inadequate teacher training programmes identified in previous studies (Morrier, Hess, & Heflin, 2011; Scheuermann, Webber, Boutot, & Goodwin, 2003) may imply that there could be some concerns regarding pre-service teacher training programmes for both general education and special education teachers in New Zealand.

The Relations between Teacher Knowledge and Teacher Experience of Working with ASD Students

Participants' knowledge regarding autism for 30% of the items differed significantly depending on years of experience. The analyses revealed that teachers with more than 15 years of experience working with children with ASD were more likely to have more accurate knowledge about autism than teachers with less experience, which was inconsistent with Haimour and Obaidat's study in which teachers with less experience tended to be more knowledgeable regarding autism (Haimour & Obaidat, 2013). However, similar to the current study, other research has indicated that teachers with five or more years of experience with autism or teachers who have interacted with autism intensively (intensive experience with children with ASD) were more knowledgeable than their counterparts with no experience or with less interaction with ASD (Ables et al., 2011; Johnson, Porter, & McPherson, 2012).

It is suspected that most teachers in Auckland possessed autism-specific knowledge as a result of their practice or experience (Barned et al., 2011; Campbell et al., 1996) so that the teachers with more experience would have more possibilities to gain knowledge. As long as teachers or their colleagues work with children with ASD, teachers may have access to some general information from their daily work or from their conversations with the parents of students with ASD or their colleagues (Engstrand & Roll-Pettersson, 2014). This is especially true when considering that there is no specific training regarding special needs for general education teachers in New Zealand (Rubie-Davies, personal communication,

October, 27, 2016), it is highly likely that knowledge would be gained on the job. However, other studies have shown that teachers' knowledge was not related to teaching experience of working with students with ASD (Hendricks, 2007; Humphrey & Symes, 2013). Hence, there are inconsistent findings in the literature. Additional research regarding this issue is needed.

The Relations between Teacher Knowledge and Teacher Gender

The research regarding the relations between teacher knowledge and teacher gender seems to be controversial. The current study found some statistically significant differences between male and female teachers in terms of one-fourth of the total items, which was similar to Al-Sharbati and colleagues' study (2015) in which male teachers were more likely to harbour misconceptions about some aspects of autism than female teachers. However, another study showed that teachers' gender was not related to teachers' level of knowledge (Haimour & Obaidat, 2013). The inconsistency may be due to the specific context and participants. In the present research, there were only 47 male teachers (18%) and 75% of the male teachers in this study were general education teachers, and half of them had no experience or little experience of working with children with ASD. Additional research in terms of the role of teachers' gender in influencing teacher knowledge of ASD is needed.

Exploring Teacher Knowledge in the New Zealand Context

The current study was conducted to provide a preliminary analysis in relation to teachers' knowledge regarding autism, in one urban city in New Zealand. Although there has

been some research investigating teacher knowledge about children with ASD (Able,

Sreckovic, Schultz, Garwood, & Sherman, 2015; Johnson, Porter, & McPherson, 2012;

Mavropoulou & Padeliadu, 2000), little has been located in New Zealand. The current

research has provided additional evidence to the literature regarding teachers' autism-specific

knowledge. It has shown that teachers hold both correct knowledge and misconceptions

about students with ASD, which was similar to the research conducted in the United States

(Hendricks, 2011; Stone & Rosenbaum, 1988; Stone & Rosenbaum, 1988), Greece

(Mavropoulou & Padeliadu, 2000), and Malaysia (Toran et al., 2016).

Furthermore, both special education and general education teachers were investigated

in this study. Previous studies have mainly explored teacher knowledge either from the

general education teachers' perspective (Al-Sharbati et al., 2015; Leblanc, Richardson, &

Burns, 2009), or the special education teachers' perspective (Hendricks, 2011; Toran et al.,

2016). Very few studies have focused on both types of teachers. Since students with ASD

were eligible to study within special education schools and general education schools, this

study highlighted the importance of examining teacher knowledge of both types of teachers.

Some existing research has examined the relations between teacher experience of

working children with ASD and teacher knowledge, and the relations between teacher

knowledge and teacher gender, but there has been no consensus about the relations between

teacher knowledge and those teacher demographic characteristics. The current study has

provided additional evidence to the literature regarding the possible relations between those

variables, and suggested that taking the specific participants and research context into account may help in understanding some of the inconsistent results.

Overall, the majority of teachers in the current study held accurate knowledge for a quarter of the items in the Autism Survey and held different degrees of misconception about three-fourths of the items. It appeared that teachers did not have adequate knowledge regarding autism. Although the reason teachers have not been equipped with adequate knowledge is unknown (and beyond the purpose of this research), teachers' lack of knowledge is undesirable. This may partly hinder the development of children with ASD and also generate some unfavourable impacts on teachers, such as a sense of burnout (Williams, Schroeder, Carvalho, & Cervantes, 2011).

For one thing, teachers' autism-specific knowledge may influence students' learning by interacting with other factors. Previous studies have shown that teacher knowledge regarding autism might be related to teacher expectations (Helps et al., 1999; Howlin, 1994), teachers' self-efficacy (Engstrand & Roll-Pettersson, 2014), teacher beliefs (Ernest, 1989; Woolfolk Hoy, Davis, & Pape, 2006), and teaching practice (Cochran-Smith & Lytle, 1999). Teachers may have unrealistic expectations for students with ASD and low self-efficacy in teaching those children because of their insufficient knowledge about autism. Unrealistic expectations (Helps et al., 1999) and low self-efficacy (Toran et al., 2016) may influence teachers' beliefs in terms of what kinds of learning opportunities they should provide to students with ASD, and further influence the ways in which teachers interact with students

(Good & Brophy,2008) with ASD. Since teachers normally provide limited learning

opportunities for their students and interact with them in a less effective way when they hold

low expectations for individual students, ASD students' learning may be hindered if teachers

hold low expectations for them.

Facing ASD students each day without adequate knowledge and skills to serve them

may result in teachers experiencing tension and anxiety when they teach such students

(Emam & Farrell, 2009), and, in turn, generate a sense of burnout and dissatisfaction with

their job (Cappe, Smock, & Boujut, 2016; Williams et al., 2011). Therefore, the findings in

the current study have highlighted the importance of examining teachers' knowledge of

autism.

Summary

Teachers' knowledge with regard to autism showed a mixed picture. Overall,

teachers held accurate knowledge for one-fourth of the items in this study and held some

degree of misconceptions about the remainder, which may suggest that teachers were not

equipped with adequate knowledge about autism. Meanwhile, it seemed that teachers'

autism-specific knowledge varied by their demographic characteristics. Although special

education teachers were more likely to possess more accurate knowledge than their general

education counterparts, both of them held some accurate knowledge and harboured some

degree of misconceptions about children with ASD. In addition, teachers with more than 15

years of experience working with children with ASD were more knowledgeable than teachers

with fewer years' experience or no experience working with children with ASD. Teachers'

knowledge about autism was influenced by teacher gender in terms of one-fourth of all items.

Female teachers tended to be more knowledgeable than their male counterparts.

Teachers' knowledge about autism may relate to teacher expectations for children

with ASD (Helps et al., 1999), but this has not been explored widely. The next study focused

on teacher expectations for children with autism. It aimed to explore what the expectations of

teachers were for ASD students in terms of their academic and social performance, and

whether there was a relation between teachers' academic expectations and social

expectations.

Chapter Four

Study Two: Exploring Expectations that Teachers Have for their Students with Autism

Spectrum Disorder

The previous chapter (Study One) explored teachers' autism-specific knowledge from a range of teachers. Study Two investigated teacher expectations for students with autism spectrum disorder (ASD) with regard to students' academic achievement and social development. The focus of this study was on teacher expectations for individual students with ASD as this had not been previously examined. Teachers' report of students' current academic and social performance, and teacher expectations for students' achievement one year later were collected. It was predicted that teachers' expectations would vary for individual students with ASD in terms of those two aspects, and some teachers may have higher expectations than other teachers. The research questions for this study were:

1. What are teachers' expectations for children with ASD in terms of their academic achievement and social development?

2. Is there a relationship between teachers' reading expectations and social expectations for children with ASD?

Method

Participants

The participants in this study consisted of 27 teachers from eight general education schools and four special education schools. They were a subsample of the teachers from

Study One. All of the teachers had at least one student with ASD. Among them, 14 teachers

worked in mainstream schools (two of them worked in the special unit in a general education

school) while the remainder worked in special education schools. The majority of the

participants were female ($n = 23$), with four male teachers. Approximately 37% of teachers

($n = 10$) had less than five years of experience teaching students with ASD, while 22% of

teachers ($n = 6$) had more than 15 years of experience teaching students with ASD.

Moreover, 63% of teachers ($n = 17$) had a bachelor's degree, 15% ($n = 4$) had a master's

degree, and the remaining teachers held other qualifications.

Those 27 teachers completed 34 questionnaires which represented their views of 34

students with ASD. In other words, some teachers completed more than one questionnaire

because they had more than one student with ASD in their class. With respect to the 34

students, 6 were girls while 28 were boys. The students' ages ranged from 5 to 20 with a

mean of 11.2 years. A range of ethnicity was represented. The largest proportion were

European ($n = 13$), followed by Pasifika ($n = 7$), Māori ($n = 6$), Asian ($n = 4$) and other

ethnicity ($n = 4$).

Measures

The current study utilised a questionnaire to explore teacher expectations of academic

achievement and social development for students with ASD. Prior to providing details about

the questionnaire, it is necessary to introduce the educational context of New Zealand, which

will help in understanding the design of the questionnaire in this study. According to the

Education Review Office (2012), both special schools and mainstream schools provide more literacy programmes than numeracy programmes to students with special needs. In order to obtain sufficient data, this study aimed to explore teacher expectations for students' reading achievement, and treated teacher reading expectations as representative of predicted student academic achievement.

In addition, all students in New Zealand are expected and required to meet the National Curriculum Standards (Ministry of Education, 2013). Considering that there are a few children who might have very high special education needs, they are required to meet Level 1 of the New Zealand Curriculum by the end of their school journey (Ministry of Education, 2013). For those children, the Central Region Special Schools Cluster (CRSSC) have developed the Listening, Reading and Viewing Framework to specify their goals to help students with special needs achieve the Level 1 curriculum standard during their school attendance (Ministry of Education, 2013). That is to say, all students with ASD are expected to meet the National Curriculum Standards, at least to meet the requirement of the Level 1 curriculum by the time they leave the compulsory schooling sector.

Although all the schools used the National Curriculum Standards as their guideline, different schools used different assessment tools to test and evaluate their students with ASD. With regard to reading assessment, for example, mainstream schools were using e-asTTle, PATs or STAR reading tests, whereas special schools were using PM Benchmark or the P scale. Although these tests are not described in this thesis, the list of the range of standardised tests being used in schools provides a sense of the wide variety of tests that were

being used across the schools in this study. Since the participants in this study came from

different schools, using different tests, it was difficult for the researcher to gather data on

students' actual achievement using a common assessment. Furthermore, it could be difficult

to develop an objective measure to test all ASD students' academic achievement and social

development due to the variety among students with ASD in terms of their achievement and

social skills. Therefore, unlike the traditional teacher expectancy research, which has

explored teacher expectations by collecting student actual achievement in their studies (e.g.

Brophy, 1983; T. Good & Brophy, 2008; Rubie-Davies, 2008), this study was only able to

explore teacher predictions of students in terms of students' reading, and used teacher

predictions as a proxy of teacher expectations for students' reading achievement.

A questionnaire was designed to combine the current situation of autism teaching in

New Zealand and the findings of previous studies. It reflected the variation of teacher

expectations that might be found together with the individual characteristics of children with

ASD. The framework of the questionnaire is presented in Figure 1.
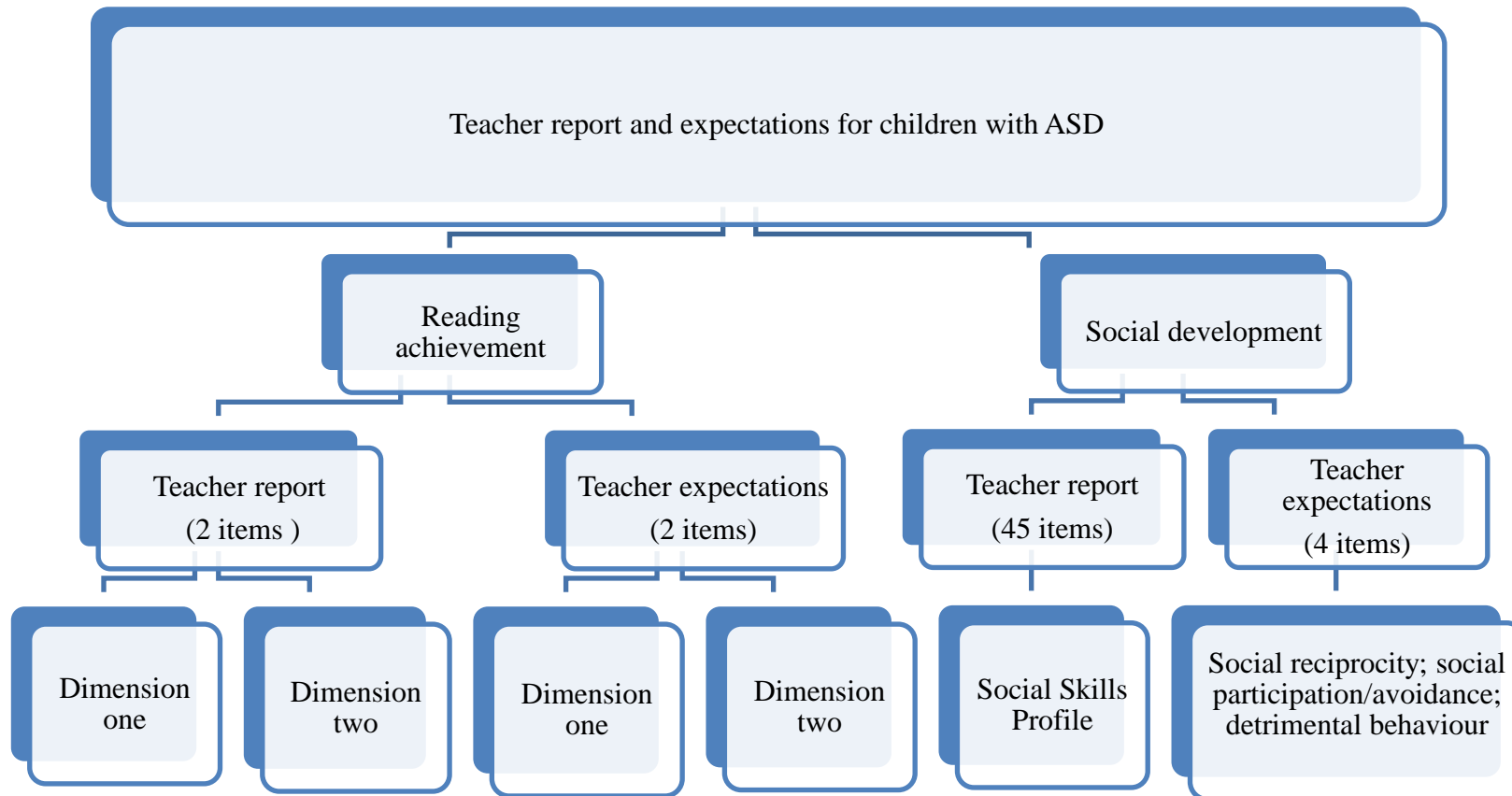
Figure 1 The framework of the questionnaire

There were two subquestionnaires. The first subquestionnaire aimed to explore

teacher expectations for ASD students' reading achievement. It comprised two dimensions.

This was mainly due to the fact that some children with ASD may study within the Level 1

curriculum for a long time whereas others may have average or better performance in reading

in comparison with their typically developing peers. The first dimension (Dimension one)

was designed to examine teacher report and expectations for children with ASD who worked

within the Level 1 curriculum during the school period, which was in accordance with the

indicators of the Listening, Reading and Viewing Framework (Ministry of Education, 2013).

The framework has two sublevels (Fuel and Launch) with a total of 10 grades, which

represent different levels of reading performance and development. For example, students at

Fuel 1 level would "encounter texts/visual media and reading activities in a literacy rich

environment without showing any apparent response". The research divided the first

dimension into 10 positions in accordance with the 10 grades of the framework, for example,

1 = "Fuel 1", 2 = "Fuel 2" to 9 = "Launch iii", 10 = "Level 1". By segmenting in this way, it

was feasible for the participants to assess and predict their students' reading achievement.

Teachers were asked to report students' current achievement and predict their performance

one year later based on the 10 grades of the indicators.

The second dimension (Dimension two) was designed to examine teacher

expectations for children with ASD with average or better reading performance (in

comparison with their typically developing peers), using the rating scale developed by Rubie-

Davies (2008). She developed a seven-point Likert scale referred to as the Academic and

Non-Academic Rating Scale to explore teacher expectations for students' reading

achievement and physical skills. Because the current research only focused on teacher

expectations for students' reading achievement, the part related to students' physical skills in

the original rating scale was deleted. Further, considering that average students in schools

usually take two years to complete one curriculum level in New Zealand (Ministry of

Education, 2013), and it was unknown which grade of children would be involved in the

survey, the researcher designed several editions of indicators to assist teachers working in

different grades. A teacher who taught children in Year 3 or Year 4, for example, was asked

to report the child's current reading performance by choosing one of the following grades: 1=

very much below average (i.e., this child is about half-way or less through the work at Level

1 of the curriculum now), 2 = moderately below average (i.e., this child is completing the

work at Level 1 of the curriculum now), 3 = just below average (i.e., this child is beginning

the work at Level 2 of the curriculum now), 4 = average (i.e., this child has almost completed

half the work at Level 2 of the curriculum now), 5 = just above average (i.e., this child has

completed half the work at Level 2 of the curriculum now), 6 = moderately above average

(i.e., this child has completed the work from the curriculum at Level 2 now), 7 = very much

above average (i.e., this child is working at Level 3 of the curriculum now).

Teachers were then asked to predict the child's reading achievement for the same time

in the next academic year by choosing one of the following grades: 1 = very much below

average (i.e., I would expect this child to be about half-way or less through the work at Level

112

1 of the curriculum in one year's time), 2 = moderately below average (i.e., I would expect this child to be almost completing the work at Level 1 of the curriculum), 3 = just below average (i.e., I would expect this child to be beginning the work at Level 2 of the curriculum by the end of this year), 4 = average (i.e., I would expect this child to have almost completed half the work at Level 2 of the curriculum by the end of this year), 5 = just above average (i.e., I would expect this child to have completed half the work at Level 2 of the curriculum by the end of this year), 6 = moderately above average (i.e., I would expect this child to have completed work from the curriculum at Level 2 by the end of this year) , 7 = very much above average (i.e., I would expect this child to be working at Level 3 of the curriculum by the end of this year). Hence, this questionnaire was designed to measure teachers' expectations of student progress over a one-year period, based on current achievement. At the end of this subquestionnaire, there was an open question where teachers were asked to briefly describe their expectations of what their ASD students would be able to do in reading in one year's time.

The second subquestionnaire aimed to explore teacher report of their ASD students' current social development. The Autism Social Skills Profile (ASSP) was adopted. The ASSP, developed by Bellini and Hopf (2007), is regarded as the only instrument that precisely identifies the social skills of children with ASD (Bellini & Hopf, 2007). It covers a range of social behaviours of students with ASD and has three subscales (Social Reciprocity, Social Participation/Avoidance, and Detrimental Social Behaviours, respectively). This

survey has excellent internal consistency and test-retest reliability within the subscales and

total scores. Specifically, the interclass correlation for the total scale was .926; for the Social

Reciprocity subscale, it was .921; for the Social Participation/Avoidance subscale, it

was .891, and for the Detrimental Social Behaviours subscale, it was .848 (Bellini & Hopf,

2007). A four-point Likert scale is used in the assessment tool, which has the following

gradations: N = never or almost never exhibits the skill or behaviour; S = sometimes or

occasionally exhibits the skill or behaviour; O = often or typically exhibits the skill or

behaviour; V = very often or always exhibits the skill or behaviour. The possible total score

ranges from 45 to 180 for the total scale, and the possible score ranges from 23 to 92 for the

Social Reciprocity subscale, from 12 to 48 for the Social Participation/Avoidance subscale

and from 4 to 40 for the Detrimental Social Behaviours subscale respectively.

After the ASSP, four more questions were added to explore teachers' expectations for

their ASD children's social development in one year (this was regarded as the teacher's social

expectations subscale). Those four questions were developed in accordance with the main

theme of the three subscales of ASSP for the purpose of ensuring that the teachers' social

expectations and social report explored the same aspect of social skills of students with ASD.

Because the Social Reciprocity subscale includes two aspects which represent the active

maintenance of social interactions and the demonstration of perspective-taking skills,

respectively (Bellini & Hopf, 2007), there were two items regarding teacher expectations for

social reciprocity. One item was about teacher expectations for active maintenance of social

interactions and another was about teacher expectations for demonstrating the perspective-

taking skill. For example, one item was: "How much do you anticipate that this child will be

able to actively maintain social interactions one year from now in comparison with her/his

current performance?" Meanwhile, there was only one item about teacher expectations for

social participation and detrimental social behaviours, respectively. A sample question was as

follows: "How much do you anticipate that this child will be able to positively engage in

social activities one year from now in comparison with her/his current performance?"

Teachers were provided with five-point answers, from 1 = decrease greatly, 2 = decrease

slightly, 3 = stay the same, 4 = increase slightly, to 5 = increase greatly.

Procedure

As outlined in Study One, ethical consent was gained from the University of

Auckland Human Participants Ethics Committee (Ref: 011600). With consent from the

school principals and teachers, the researcher contacted and met with each teacher

individually in June and July 2014. Typically, the teacher and the researcher met in the

individual teacher's office or staff room. Prior to the survey, the researcher briefly introduced

the framework and content of the questionnaire. Then the researcher asked the teachers to

keep one student with ASD (some teachers may only have had one student with ASD) in

mind and report whether that particular student's reading was or was not at a similar level to

that of their typically developing peers. Based on the teachers' preliminary report, the

researcher provided either the Listening, Reading and Viewing Framework or the National

Curriculum Standard—Reading to the teachers and asked the teachers to report student

current achievement (based on student's reading records) and then make a prediction

regarding the particular student according to the indicator provided. After that, the teachers

were asked to answer the questions regarding social skills and to respond to the open question

regarding teachers' reading expectations.

Data Analysis

The quantitative data were analysed using the statistical software SPSS version 22.0

(International Business Machines, 2013). The demographic information and teachers' report

and prediction of students' reading achievement were analysed descriptively. With regard to

the descriptive analysis with teacher report of student social development, the total score for

the ASSP and the subtotal scores for the three subscales were calculated. The negative items

were reversed before the total score calculation (Field, 2013). After that, the mean score of

ASSP and its three subscales for each case were calculated by aggregating responses to the

individual items. This was also true for teacher social expectations. The mean score and

standard deviation for each case was calculated.

Two approaches were used to analyse the correlations between teachers' reading

report and reading expectations for the purpose of presenting the data holistically. The first

approach was to calculate the correlation by Dimension one and Dimension two, respectively.

The second approach was to calculate the correlation by combining (the samples of)

Dimension one and Dimension two. As mentioned before, there were two dimensions for

teachers' reading report and reading expectations: whereas Dimension one was designed for

students with high special needs in reading, Dimension two was designed for students with

116

average or better reading performance. The first approach was to code teachers' responses (both teachers' reading report and reading expectations) by the different dimensions so the number of students who were in Dimension one and Dimension two was 13 and 21, respectively. Accordingly, the correlation for Dimension one was calculated on the sample of 13 students whereas the correlation for Dimension two was calculated on the sample of 21 students.

The second approach was to combine all the teachers' responses. Therefore, there were 34 teacher reports, and 34 teacher expectations, respectively. Accordingly, the researcher added two categorical variables, namely "teacher reading report total" and "teacher reading expectations total", respectively. The researcher recoded the 10 grades of Dimension one as 1 to 10, and recorded the seven grades of Dimension two as 11 to 17 in both new variables. For example, the grade one of Dimension one was recoded as 1 whereas the grade one of Dimension two was recoded as 11. In this way, the correlation between the teacher reading report and reading expectations was calculated on the sample of 34.

In order to calculate the correlations between teacher social expectations and teacher report of student social development, a Z-score for each item was created. This was mainly because this study used different Likert-point scales to explore teacher report and expectations in terms of student social development. After standardising the original scores, the correlation between teacher report of student social performance and teacher prediction of

student social development was calculated using Spearman's correlation because it is suitable

for ordinal or ranked data (Pallant, 2013).

Further analysis involved correlations between various variables: teacher reading

expectations, social expectations, social report, and reading report. The original score of each

variable was standardised by using a Z-score before the analysis. The Spearman's correlation

was also used to examine the relations between teacher reading expectations and social

expectations, reading report and social expectations, reading expectations and social report,

and social expectations and reading report.

Reliability

Given that the current study used the Autism Social Skills Profile to explore teachers'

report of ASD students' social development, Cronbach's alpha correlation analyses were used

to reassess the internal consistency of the Autism Social Skills Profile based on the data. In

accord with Bellini and Hopf's study (2007), negatively-worded items were reversed-scored

for further analysis. The results showed an alpha coefficient of .931 for the total scale.

Meanwhile, the three subscales also showed good internal consistency, with a Cronbach alpha

coefficient reported of .914 for the Social Reciprocity subscale, .869 for the Social

Participation/Avoidance subscale and .813 for the Detrimental Social Behaviours subscale,

respectively, in the current study. The high internal consistency of the Autism Social Skills

Profile in the current study was consistent with those of the previous study (Bellini & Hopf,

2007). In addition, considering this study also used four questions to further examine

teachers' expectations for ASD students' social development (teacher social expectations), the

internal consistency of those four questions was examined. As the fourth question was written negatively, it was reverse-scored for the purpose of calculating the reliability. The results revealed an alpha coefficient of .63. Based on the information provided in the item-total correlations and alphas (if the items were deleted) for each item, the fourth item was excluded. The exclusion of this item improved the internal consistency of this additional scale to an alpha coefficient of .70, which was considered acceptable (Chafouleas et al., 2006).

The qualitative data were transcribed manually. Considering that the current study aimed to provide more details about teachers' reading expectations, an inductive approach was utilised to produce substantive codes from the data and to develop a systematic theory at a broad conceptual level (Creswell, 2012). After the transcription, five steps described by Braun and Clarke (2006) for analysing qualitative data were incorporated into the data analysis procedure. Firstly, the researcher became immersed in the dataset in order to become familiar with teachers' responses. Secondly, the interesting features of the data were coded. The third step was to search for themes by collating codes and gathering the relevant data. The researcher then reviewed all the candidate themes to ensure that they presented a convincing story in relation to the research question and data. Finally, themes with clear definitions were identified (Braun & Clarke, 2006). In addition, 15% of the transcriptions were coded by another researcher who was experienced in qualitative research. The two coders reached more than 90% agreement (kappa = .91, $p < .001$).

Results

Descriptive Statistics of Teachers' Report of Student Reading Achievement and Teachers' Reading Expectations

With regard to teachers' report of students' reading achievement (reading report), 13 students were reported at the Dimension one level while 21 students were reported at the Dimension two level. That is to say, the reading level of nearly 40% of students with ASD was far behind the Level One national curriculum standard compared with students whose reading level was considered average. As for teacher expectations, teachers predicted that 17 students would remain at the same level in one year whereas they predicted that 14 students would reach the next level of reading and three students would achieve an increase of two levels. As four individual teachers rated more than one student, it is also worth noting that those individual teachers held similar expectations for all the students they rated in terms of students' reading achievement. That is, if they expected one of their students to improve one level in one year, they expected their other students also to increase by one level. The questionnaire included an open question regarding the teacher's prediction of future reading achievement for children with ASD. The majority, 29 out 34, of the questionnaires had this question completed. A preliminary analysis of this question will be provided later in this chapter.

Although this study revealed that teachers had differing predictions for individual students with ASD, whereas individual teachers held similar expectations for all their students, one trend was found: teachers' expectations for students' reading could be grouped

into three different groups based on the number of levels of prediction. In addition, previous

studies have shown that teachers may have normative expectations for all students in the class

(Li, 2014; Rubie-Davies, 2008). Since four teachers held similar predictions for all the

students they rated, this added weight to the use of the number of levels teachers predicted

students would gain as a proxy for teacher expectations. That is to say, teachers who

expected their students' reading would stay at the same level (LS), teachers who expected

their students' reading would increase one level (L1) and teachers who expected their

students' reading would increase two levels (L2) in a one-year period were grouped,

respectively. Table 6 shows that teachers from the L2 group predicted maximum student

progress whereas teachers from the LS group predicted minimum progress, regardless of the

reported functioning of their students. The functioning level of the students included two

types of functioning with abbreviations in brackets: high functioning autism (H), not high

functioning autism (NH). Similarly, the teachers' role is presented by using abbreviations in

brackets: special education teacher (ST) and general education teacher (GT).

Table 6

Pseudonyms for 27 Teachers and the Functioning Level of the Students

Teacher No	Teacher group	Pseudonym	Teacher role	Functioning level of student
1	L2	Gianna	ST	H
2	L2	Jennifer	GT	H
3	L2	Tracy	GT	H
4	L1	Aria	ST	NH
5	L1	Ada	GT	H
6	L1	Anna	GT	NH
7	L1	Charlotte	ST	NH
8	L1	Chloe	ST	H
9	L1	Daisy	ST	NH
10	L1	Jayden	ST	NH
11	L1	Joy	ST	NH
12	L1	Leah	GT	H
13	L1	Mona	GT	H
14	L1	Riley	GT	H
15	L1	Sophia	GT	H
16	L1	Victoria	ST	NH
17	L1	Zoe	ST	NH
18	LS	Brody	GT	H
19	LS	Ella	ST	NH
19	LS	Ella	ST	NH
20	LS	Grace	GT	H

21	LS	Hanna	ST	NH
21	LS	Hanna	ST	H
21	LS	Hanna	ST	NH
22	LS	Jean	GT	NH
23	LS	Kaylee	GT	NH
24	LS	Noah	ST	NH
25	LS	Sarah	GT	NH
26	LS	Sean	GT	H
27	LS	Yasmin	ST	NH
27	LS	Yasmin	ST	NH
27	LS	Yasmin	ST	NH

Descriptive Statistics of Teachers' Report of Student Social Development and Teachers' Social Expectations

In terms of teachers' response to the ASSP, the total score and mean score of the total scale, and the three subscales were calculated respectively. The total score for the ASSP in the current study ranged from 77 to 156, with a mean score of 100.91 ($SD = 16.39$). The total score for Social Reciprocity ranged from 23 to 78, with a mean score of 46.15 ($SD = 11.02$). The total score for Social Participation/Avoidance ranged from 15 to 44, with a mean score of 26.68 ($SD = 6.29$) whereas the total score for Detrimental Social Behaviours ranged from 16 to 37, with a mean score of 28.09 ($SD = 5.09$).

Given three questions were designed to explore teacher expectations for social development of students with ASD, teachers' responses will be mainly presented in relation

to these three questions. With regard to teacher expectations for students in terms of maintaining social interaction actively, approximately 27% of students ($n = 9$) were predicted to stay at the same level (of social interaction) for the year, more than 70% ($n = 24$) of students were predicted to increase slightly and 3% ($n = 1$) of students were predicted to increase greatly over the same period. In addition, the percentage of students who were predicted to make a slight or a great improvement in their ability to demonstrate perspective-taking skills were 65% ($n = 22$) and 3% ($n = 1$) respectively, while the figures for students who were predicted to maintain their level of skills or have it decrease slightly were around 29% ($n = 10$) and 3% ($n = 1$). Similar findings were found for teacher expectations of engaging in social activities positively. The majority of students (approximately 77%) were predicted to make either a slight improvement or a great improvement. Only one-fifth of students ($n = 7$) were predicted to stay at the same level, while even fewer students, 3% ($n = 1$) were predicted to have skills decrease slightly.

The mean score of teacher prediction that the student would maintain social interaction actively was 3.76, with a standard deviation of .50. Similar results were also revealed for teacher prediction of demonstrating perspective-taking skills ($M = 3.68$, $SD = .589$) and engaging in social activity positively ($M = 3.79$, $SD = .592$). The overall mean score of teacher expectations of social development for the three questions was 3.75 on a five-point Likert scale. This finding may suggest that teachers in the current study held relatively favourable expectations for their students in terms of their social development because, overall, they predicted their students to make some improvements in social areas.

Teachers' Reading Expectations and Social Expectations

In order to better illustrate the research findings, individual teachers' reading expectations and social expectations for their ASD students have been listed (see Table 7). Teachers' expectations regarding students' reading achievement were represented by the number of levels teachers predicted their individual students would gain. Therefore, teachers' predictions of two levels of increase, one level of increase, and staying at the same level, were represented as 2, 1, and 0, respectively. Similarly, teachers' social expectations were represented by the extent to which teachers expected their individual students would gain. That is to say, teachers' predictions of staying at the same level were represented as 0, and teachers' predictions of slight improvement and great improvement was represented as 1 and 2 respectively. Accordingly, teachers' predictions of slight or great decrease were recorded as -1 and -2.

Table 7

Teachers' Reading Expectations and Social Expectations for Individual Students with ASD

Teacher No.	Teacher group	Reading expectations	Social expectations		
			Maintaining social interaction actively	Demonstrating perspective-taking skills	Engaging in social activities positively
1	L2	2	1	1	1
2	L2	2	0	1	1
3	L2	2	1	1	1
4	L1	1	0	0	1
5	L1	1	1	1	1
6	L1	1	1	0	0
7	L1	1	1	1	1
8	L1	1	1	1	1
9	L1	1	1	1	1
10	L1	1	1	1	2
11	L1	1	0	1	0
12	L1	1	1	2	1
13	L1	1	0	0	1
14	L1	1	2	1	1
15	L1	1	1	1	1
16	L1	1	1	1	1
17	L1	1	1	1	1
18	LS	0	1	1	1
19	LS	0	1	1	1
19	LS	0	0	1	0
20	LS	0	1	0	1
21	LS	0	1	0	1
21	LS	0	0	0	1
21	LS	0	1	0	-1
22	LS	0	1	0	1
23	LS	0	1	0	1
24	LS	0	0	0	0
25	LS	0	1	1	0
26	LS	0	1	1	2
27	LS	0	1	1	0

| 27 | LS | 0 | 1 | 0 | 0 |
| 27 | LS | 0 | 0 | 1 | 1 |

Although teachers seemed to hold different social expectations and reading expectations for their individual students with ASD, it is interesting to note that 12 of 17 teachers (70% of teachers) from the L1 and L2 groups predicted that their individual students would make some degree of improvement in both reading and social development (across the three questions). In contrast, only three teachers from the LS group (30% of teachers) predicted that their students would make some improvement in all three dimensions of social development. It appeared that L1 and L2 group teachers were more likely to predict overall social improvement for their ASD students compared with their LS group counterparts. This may also provide a clue to further examination of the possible relations between teachers' reading expectations and social expectations.

Correlations

Several correlations were run to explore the relations between teachers' reading report and reading expectations, social report and social expectations, and reading expectations and social expectations. Spearman's correlations showed that there was a high positive correlation between teachers' overall reading report and reading expectations ($r = .961$, p $< .001$) for the total sample ($n = 34$). There was also a statistically significant relation between teachers' reading report and reading expectations ($r = .975$, $p < .001$) for Dimension one, and a statistically significant relation between teachers' reading report and reading expectations ($r = .939$, $p < .001$) for Dimension two.

The relations between teachers' report of social development and teachers' social prediction was calculated by examining the relations between teachers' social prediction (Z score of total score) and teachers' total social report (Z score of total score of ASSP), and between teachers' social prediction and the three subscales respectively. Table 8 shows that teachers' report of students' detrimental behaviour had a statistically significant negative relation with teachers' prediction of students' social performance ($r = -.344$, $p < .05$). Apart from that, there were non-statistically significant correlations between teachers' social predictions and social reports (ASSP) and the two other subscales.

Table 8

Correlations between Social Expectations and Variables Related to Social Report

Variables	1	2	3	4
1 Teachers' social expectations total				
2 Teachers' social report total	-.034			
3 Teachers' report of social reciprocity	.130	.860**		
4 Teachers' report of social participation/avoidance	.082	.847**	.662**	
5 Teachers' report of detrimental behaviours	-.344*	.112	-.257	-.048

*Note: *p < .05 (two-tailed) **p < .001 (two-tailed)*

A Spearman's correlation was used to analyse any correlation between teachers'

reading expectations and social expectations (see Table 9). The results showed that there was

a weak but non-statistically significant correlation between teachers' reading expectations and

the three dimensions (three questions) of social expectations.

Table 9

Correlations between Reading Report/Expectations and Social Report/Expectations

Variables	1	2	3
1 Teachers' reading report total			
2 Teachers' reading expectations total	.961**		
3 Teachers' social report total	.031	.099	
4 Teachers' social expectations total	.018	-.062	-.034

*Note: **p < .001 (two-tailed)*

Further analyses were conducted to explore any possible relations between teachers' reading expectations and teachers' report of student social development (ASSP), teachers' social expectations and teachers' report of student reading achievement, and teachers' report about student reading achievement and social development. The results revealed that there were no statistically significant relations between any of those variables (factors).

Qualitative Data related to Teachers' Reading Expectations

At the end of the survey, teachers were asked to briefly describe their expectations for the students' reading achievement in a one-year period. This question was designed to provide more grounds for understanding why teachers had particular expectations for particular individual students, as reflected in the rating scale, and further enhance understanding of teachers' reading expectations for children with ASD. Since teachers in this study were grouped into three groups, based on the number of levels they predicted students would gain in reading, the current study aimed to explore whether teachers who predicted that their students would move more levels differed in their explanation of their expectations from those who believed the students would move less.

It is not surprising that teachers provided diverse predictions for individual students with ASD because those students varied one from another regarding their reading performance. Among those diverse responses, the theme that emerged was improvement. All the teachers, no matter from which group, stated that their students would make some degree of progress in reading in one year. For example, Sarah, a general education teacher from the LS group reported: "He will be able to read fluently; able to decode unfamiliar words from

130

the text; able to comprehend simple questions such as setting, characters and problems in a text." Likewise, Aria (a special education teacher from the L1 teacher group), stated of another student: "He will be able to give a short summary of a story. Read and provide important details with prompting support". Jennifer, a general education teacher from the L2 group wrote "Make inferences about what he has read by using several pieces of information; use information from his reading to complete other tasks e.g., write a report".

However, it seemed that teachers from different expectation groups had differing emphases in relations to students' ability. Among them, most teachers from the LS group (6/10) tended to emphasise students' impairments when making their prediction. For example, Brody, a general education teacher reported: "I believe that he should be able to decode and read texts at his age level or above, but his comprehension of the texts may have limitations." Noah, a special education teacher reported: "He will be able to read labels and label correct pictures, but his comprehension is always below [average]."

In contrast, most teachers from the L1 (11/14) and L2 group (3/3) appeared to predict students' capability in a comparatively more positive way because they did not mention the students' impairment. Take Sophia (a general education teacher from the L1 group), for example. She reported: "He will be a confident reader, with good understanding of the story when spoken to verbally. He will be able to answer questions with more details." Another special education teacher, Daisy (from the L1 group), stated of another student: "[He] has excellent decoding skills so I expect him to be able to read more complex text; gain a wider

vocabulary; less 'word skipping' when reading aloud." Similarly, Gianna, the special education teacher from the L2 group, wrote: "[He is] a high-beginning reader without adult prompting; [he will be able to] identify the links of words with assistance; enjoy reading books at his level."

There were a few exceptions. Two teachers seemed to provide contradictory ideas regarding their reading expectations in the rating scale and this open question. Ella, a special education teacher, who predicted that her students would not make gains in level on the rating scale, wrote: "He will continue to read non-fiction (his favourite books) which of course will improve his levels". Joy, another special education teacher who expected that her student would make one level of progress in one year reported: "We are still working on her eye-hand-coordination; eye tracking skill is not present at the moment. Progress may be really slow".

Discussion

Teachers' Reading Expectations for Children with ASD

Teachers' reading expectations revealed three different levels in the current study. Whereas some teachers predicted that students would make one or two levels of increase, others predicted that their students would not make any levels of increase in a one-year period. Moreover, although this study cannot determine whether the teacher expectations for children with ASD in reading were too high or too low in comparison with their actual achievement, the study at least revealed that half the students in this study were predicted to

make measurable improvements (make one level of improvement or more) and no students were predicted to decrease their reading level in a one-year period. This may mean that teachers did not hold expectations for them that were too low.

In addition, teachers' reading expectations were closely related to teachers' report of students' current reading performance. Previous studies have mainly focused on the relations between students' prior achievement (students' achievement from the previous school year) and teacher expectations (Jussim & Eccles, 1995; Rubie-Davies, 2008); this study adds weight to the role of student current performance in influencing teacher expectations (Li, 2014), even students with ASD.

Students' severity of autism was predicted to be a factor in influencing teacher expectations for them (Witmer & Ferreri, 2014). In the current study, students' severity was interpreted by students' functioning level: students with high functioning autism or without high functioning. Previous studies have shown that the functioning level of autism mainly depends on a student's general intelligence (Chiang, Tsai, Cheung, Brown, & Li, 2014; Schopler & Mesibov, 2013), and the student's general intelligence can play a role in shaping teacher expectations (Gut, Reimann, & Grob, 2013). The current study appeared to partly support previous findings because all the students with the L2 group teachers were in the high functioning autism category. However, given that there was no relation between students' severity and the expectations of the L1 and LS group teachers, this study may imply that

student characteristics were not entirely related to teacher expectations for students with ASD.

With regard to teacher descriptive expectations of students' future reading achievement, all the teachers predicted that students with ASD would be able to achieve in reading in the next year. However, teachers tended to have different preferences when reporting their expectations. Whereas teachers from the LS group were inclined to emphasise students' impairments, teachers from the L1 and the L2 group were more likely to mention students' capability and not mention students' impairments. As this study is the first one that has explored teachers' reading expectations for students with ASD, it might be too hasty to judge what kind of response predicted the more favourable outcome for students. More qualitative research around this field is needed.

It is interesting to note that four teachers in this study rated more than one student with ASD, and their responses revealed that they held the same level of expectations for the students they rated. Previous studies have shown that teacher expectations may exist at the individual level, group level, and class level (Cooper & Good, 1983; Li, 2014; Rubie-Davies, 2008), and class level expectations may have larger effects on students' learning in comparison to individual level expectations through the self-fulfilling prophecy effect (Rubie-Davies, 2008). Although it might be too hasty to generalise that teachers working with ASD students might have normative expectations for all their students, the results may provide the possibility that teachers working with ASD students also held normative

expectations. There is a need to further explore teacher class level and group level expectations for students with and without ASD.

Teachers' Social Expectations for Children with ASD

Students with ASD in this study had a variety of social skills and deficits. Although a few students had serious social impairments and others had comparatively good social skills, most students in this study were rated to perform at an average level of positive social behaviour and a low level of detrimental behaviour (from the range of total score and mean score). Furthermore, this study revealed that the average teachers' mean expectations for students' social development was 3.75 on a 5-point scale. Although the question of whether 3.75 means high or low expectations cannot be answered since there is not yet any standard by which to judge the level of teachers' social expectations, teachers' responses demonstrated that the average teacher in this study believed students with ASD would make some considerable improvement in their social development in a one-year period. Nearly two-thirds of students in this study were predicted to make some degree of increase in social behaviour across the three social expectations questions. This may mean that teachers did not hold social expectations for students with ASD that were too low.

Furthermore, as expected, teachers' report about students' detrimental social behaviours was negatively correlated with teachers' expectations of their social development because detrimental social behaviours mainly represented socially inappropriate behaviours that could generate undesirable social interactions with others (Bellini & Hopf, 2007).

Previous research has shown that some teachers attached more importance to students' social behaviour than to students' academic achievement when determining students' success in schooling (Johnson-Fedoruk, 1991), and that social behaviour issues have become an increasing concern for teachers serving children with ASD (Simpson & Myles, 2008). It was not unexpected that student social behaviour would correlate, sometimes adversely, with teacher expectations for their social development, or even with teacher expectations for students' academic achievement (Teklu & Kumar, 2013).

Furthermore, considering that students with ASD may not easily eliminate detrimental behaviour, understanding such behaviour and having appropriate knowledge and strategies to help them reduce its effects and impact, might be essential for teachers. Research has shown that teachers' inadequate knowledge of strategies for dealing with students' learning difficulties may lead teachers to have low expectations for those students (see Good, 1987 for review). In order to help teachers have high expectations for ASD students, making sure that teachers are equipped with adequate autism-specific and autism-related knowledge is imperative.

The Relations between Teachers' Reading Expectations and Social Expectations

With regard to teacher expectations for reading achievement and social progression, no statistically significant correlations were found between them, which was inconsistent with a previous study (Teklu & Kumar, 2013). When exploring teacher expectations for children with emotional and behavioural disorders regarding their academic achievement and social skills, Teklu and Kumar (2013) found a close relation between teacher academic

136

expectations and social expectations. This apparent inconsistency may be partly because the

subjects of the previous study were children with emotional and behavioural disorders rather

than children with ASD. In addition, unlike the current study, the previous study explored

teacher expectations for secondary students (Grade 9 and 10). The students' age and grade

level may play a role in influencing teacher expectations (see Jussim et al., 1998 for reviews),

and, in turn, influence the relations between teacher social expectations and reading

expectations.

The current study showed that there was no statistically significant correlation

between teacher reports of students' social development and teacher reports of students'

academic achievement. This finding was inconsistent with previous studies in which student

social skills and behaviours have been suggested as factors that influence teachers' report of

students' academic achievement (Bennett, Gottesman, Rock, & Cerullo, 1993; Dibapile,

2012; Malecki & Elliot, 2002; Wentzel, 2005), and may even be further linked to teacher

expectations for students' reading and mathematics achievement (Hinnant et al., 2009).

Some possible reasons may account for the inconsistency. It may be partly due to the

different research subjects (typically developing children and children with ASD,

respectively), and may be partly due to some other variables that may influence teacher

expectations for ASD students that have not been covered in this study, such as students'

ethnicity (Hinnant et al., 2009; Woodcock & Vialle, 2011). Another possible reason is that all

the participants in this study worked with children with ASD. Perhaps their experience had

shown that students with ASD were more likely to improve socially than academically, or

perhaps teachers spend more time working on ASD students' social skills than their academic

field because teachers believe that ASD students need to improve their social development to

focus and improve in academic areas. Because of their experience and understanding about

children with ASD, teachers may have only taken the most relevant characteristics of their

individual students into consideration when they made their report (Tournaki, 2005). In other

words, teachers mainly focused on their students' current reading performance rather than

their social development when they reported their students' reading performance (Tournaki &

Podell, 2005).

In addition, the weak correlations between teacher social expectations and reading

expectations, and between teacher reading expectations and social report, might imply that

teachers' report and prediction about those two aspects were fairly independent. This might

be beneficial for both teachers and students with ASD. For one thing, some students with

ASD might have difficulties in either reading or social behaviour, whereas others might have

difficulties with both. If teacher report and prediction about those two aspects correlated with

each other closely, students' potential for learning might be adversely influenced. For

example, one student might have average performance in reading but have serious

behavioural problems. A teacher might predict his reading achievement to be lower than his

actual performance because of his social behaviour problem. Assumptions such as this could

hinder the student's learning because teachers may provide inappropriate learning

opportunities and experiences to the particular student.

138

For another, teachers' fairly independent report and predictions about students'
reading achievement and social development may also provide more possibility for teachers
to see and take advantage of students' learning strengths, and this has been advocated by
several researchers (Bellini & McConnell, 2010; Klett & Turan, 2012; Symes & Humphrey,
2011). As part of the core characteristics, students with ASD cannot eliminate their social
behaviour problems and learning difficulties entirely. No matter what the specific learning
difficulties are, students always have comparatively better performance in either reading or
social behaviour. Seeing students' learning strength objectively is likely to generate desirable
impacts on both students and teachers.

On the one hand, teachers were more likely to have high or favourable expectations
for students with ASD when they emphasised the learning strength of those students rather
than focusing on their learning difficulties. Teachers' high expectations might help those
students to develop more objective or positive self-perceptions since students' self-
perceptions of their academic and non-academic development were in line with their
perceptions of teacher expectations at the end of the school year (Rubie-Davies, 2008). On
the other hand, given that students' behaviour problems have been significantly linked to
teachers' stress levels (Lecavalier, Leone, & Wiltz, 2006), and stress levels have been related
to teachers' rates of burnout (Kyriacou, 1987; 2001), teachers might have a lower level of
stress and reduced sense of burnout if they focus on students' learning strengths rather than
their impairments. Accordingly, teachers might have a higher sense of self-efficacy and

higher levels of job satisfaction (Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2010) if they can promote students learning by maximizing students' learning strengths.

Teacher Expectations for A Particular Type of Student

The current study has extended the existing teacher expectancy research to a specific type of student—students with ASD. Although considerable research has shown that teacher expectations are influential in student development (e.g., Good & Brophy, 2008; Hattie, 2013; Weinstein, Gregory, & Strambler, 2004), rather less attention has been paid to teacher expectations for children with ASD. Compared with typically developing children, ASD students are more likely to rely on their teachers because of their unique learning characteristics (Simpson & Myles, 2008). Teacher expectations may play a more important role in influencing their development. Therefore, the current study was designed to preliminarily explore the expectations teachers held for individual students with ASD. Previous studies have mainly focused on teachers' academic expectations for students (Alvidrez & Weinstein, 1999; Brophy, 1983; Cooper, Findley, & Good, 1982; Demaray & Elliot, 1998; Rubie-Davies, 2008) whereas teachers' social expectations have been less frequently examined. This study not only added additional evidence about teachers' academic expectations for children with ASD, but also added new evidence in terms of teachers' social expectations.

It is interesting that the proportion of students who were expected to make some degree of improvement in their reading achievement and social development was 50% and 70%, respectively. This may imply that teachers were more likely to have favourable social

140

expectations than reading expectations. It may be partly because the content of improvement in reading (one or two level/s of increase in reading) and social development (increase slightly/greatly) was different, and it might be harder for the students to make increases in reading than in social development. It may be partly because teachers tended to believe that compared to students' reading, their social skills were more likely to improve, which may imply that teachers had more desirable beliefs in their ability to promote students' social development than to develop students' reading skills.

The present study revealed that some students' characteristics may relate to the formation of teacher expectations when reflecting the relations between teachers' report about students' current reading achievement and detrimental behaviour, and teachers' reading and social expectations. However, given that teachers' report about students' current performance in social reciprocity and social participation/avoidance was not necessarily related to teachers' social expectations for those two aspects, and students' severity of learning disability did not entirely relate to either reading expectations and social expectations, it seems that some other factors may play a more significant role in influencing the formation of teacher expectations. Furthermore, considering that most teachers who expected their ASD students to make some degree of improvement in reading (most teachers from the L1 and L2 group) also tended to predict the improvement of their ASD students in all three aspects of their social development, but there was no statistically significant correlation between teachers' reading expectations and social expectations, it was speculated that the

formation of teacher expectations was more related to the teachers themselves. Previous

studies have shown that when compared with students' characteristics, teacher-centred

variables such as teacher beliefs may play a more significant role in influencing teacher

expectations (Li, 2014; Rubie-Davies, 2008). In order to better understand teacher

expectations for children with ASD, further exploration of teacher-related factors will be

worthwhile.

Summary

Teachers seemed to hold diverse reports and expectations for students' progress in

terms of their academic achievement and social development. With regard to teachers'

reading expectations, teachers held different levels of expectations regarding their individual

students. Half the students were predicted to make some degree of improvement, whereas the

remainder were not predicted to make any measurable improvement. Teachers with more

than one ASD child consistently predicted the same gains for all their ASD students.

Therefore, the teachers were grouped into three groups (namely L2, L1, and LS group) based

on the number of levels teachers predicted their students would gain. As for social

expectations, the majority of students were expected to make some degree of improvement in

one year. Meanwhile, teachers' social expectations were not closely related to their reading

expectations. Since teachers' expectations were not entirely related to the individual students'

characteristics, it was suggested that teacher-related factors may play a role in influencing

teacher expectations for children with ASD.

Study Three will focus on teacher beliefs—one of the factors that can influence teacher expectations (Li, 2014; Rubie-Davies, 2008; 2014). The perceptions teachers held regarding students with ASD and the beliefs teachers had with regard to how to provide learning opportunities to students with ASD will be investigated. Teachers' reported self-efficacy in teaching children with ASD will also be investigated.

Chapter Five

Study Three: Exploring Teacher Beliefs about Teaching Children with Autism Spectrum Disorder

The previous chapter explored the expectations teachers held for individual students with autism spectrum disorder (ASD) in terms of their reading achievement and social development, and categorised teachers by their differing reading expectations. This chapter will focus on the beliefs of L1, L2 and LS group teachers as categorised in the study Two. Previous studies have shown that teachers' beliefs (Rubie-Davies, 2008) and self-efficacy can play a role in influencing teacher expectations (Li, 2014) for typically developing students. Given that teacher expectations were not entirely related to student characteristics in Study Two, it was thought that teacher beliefs regarding autism teaching and teachers' self-efficacy may also relate to teacher expectations. It was predicted that if teachers' beliefs and teacher expectations were closely related, teachers from different expectation groups would differ in their beliefs about autism teaching and their self-efficacy. Hence, teachers' beliefs about and their self-efficacy in teaching children with ASD were investigated and then compared by teacher expectation groups. Meanwhile, since no previous studies have examined teacher beliefs about autism teaching and teachers' self-efficacy, this study also attempted to provide an illustration of these aspects. The research questions for this study were:

1. What are the beliefs that teachers hold regarding autism teaching? What is the self-efficacy of teachers in terms of teaching students with ASD?

2. Do teachers who hold different expectations for their ASD students also differ in their beliefs about autism teaching?

3. Do teachers who hold different expectations for their ASD students also have different self-efficacy in teaching children with ASD?

Method

Participants

The participants in this study were 27 teachers from eight general education schools and four special education schools in the Auckland area. The teachers were identified in the previous study as having different levels of reading expectations for their individual students with ASD. Those 27 teachers formed three groups: three teachers whose expectations for one-year's progress were that their ASD students would move two levels above the students' current level by the end of the year (L2); 14 teachers who predicted a one-level gain in achievement over the year (L1), and 10 teachers whose expectations were that their ASD students would remain at their current level in reading (LS). Table 10 provides demographic information for the teachers in each group, along with the pseudonyms used for each teacher.

Table 10

Demographic Details and Pseudonyms for Teacher Participants

Teacher No	Teacher group	Pseudonym	Teacher role	Age	Gender	Work year	Degree
1	L2	Gianna	ST*	46–50	F	11–15	MA
2	L2	Jennifer	GT**	46–50	F	Over 20	BA
3	L2	Tracy	GT	51–55	F	11–15	BA
4	L1	Aria	ST	46–50	F	0–5	other
5	L1	Ada	GT	26–30	F	0–5	BA
6	L1	Anna	GT	36–40	F	6–10	BA
7	L1	Charlotte	ST	36–40	F	11–15	BA
8	L1	Chloe	ST	31–35	F	0–5	BA
9	L1	Daisy	ST	Over 56	F	6–10	other
10	L1	Jayden	ST	26–30	M	0–5	other
11	L1	Joy	ST	36–40	F	11–15	MA

12	L1	Leah	GT	Less 25	F	0–5	BA
13	L1	Mona	GT	41–45	F	6–10	BA
14	L1	Riley	GT	36–40	F	6–10	BA
15	L1	Sophia	GT	Over 56	F	Over 20	MA
16	L1	Victoria	ST	51–55	F	Over 20	other
17	L1	Zoe	ST	51–55	F	Over 20	other
18	LS	Brody	GT	26–30	M	0–5	BA
19	LS	Ella	ST	26–30	F	0–5	other
20	LS	Grace	GT	31–35	F	11–15	BA
21	LS	Hanna	ST	41–45	F	11–15	MA
22	LS	Jean	GT	41–45	F	11–15	BA
23	LS	Kaylee	GT	Less 25	F	0–5	BA
24	LS	Noah	ST	36–40	M	11–15	BA
25	LS	Sarah	GT	31–35	F	11–15	MA
26	LS	Sean	GT	31–35	M	0–5	BA

| 27 | LS | Yasmin | ST | Over 56 | F | Over 20 | BA |

*ST = special education teacher ** GT = general education teacher

With regard to the demographic characteristics of teachers by teacher expectation groups, Table 11 shows that the percentage of general education teachers and special education teachers who expected their students to make some degree of increase in reading in one year was 57% and 69%, respectively. In addition, 67 % of teachers in L2 group had more than 15 years of experience teaching children with ASD, while 90% of teachers in the LS group had less than 15 years of experience. It is also worth noting that three of the four male teachers in this study expected their individual students with ASD to maintain the same level of reading in one year, and those teachers were all general education teachers.

Table 11

Descriptive Information of Teachers by Teacher Expectations

		L2 group	L1 group	LS group
		N	*n*	*n*
Teachers' role				
	ST	1	8	4
	GT	2	6	6
Teaching experience-year				
	0–5	0	4	4
	6–10	0	4	0
	11–15	2	2	5
	Over 20	1	3	1

Gender				
	Female	3	13	7
	Male	0	1	3

Measures

A standard open-ended interview schedule adapted from Rubie-Davies' study (2008)

and Soodak and Podell's research (1996) was used in the current study because of findings

that predetermined questions reduce interviewer bias and restrict the tendency of interviewers

to stray from the main focus of the interview (Mcmillan & Schumacher, 2010). A range of

open and closed questions were designed to investigate teacher beliefs about the following

three topics: (a) teachers' perceptions about children with ASD; (b) teachers' beliefs about

how learning should be delivered to ASD students; (c) teachers' self-efficacy in teaching

those students. All the closed questions were explored further with the interviewee for

explanation or clarification. An initial version of the interview was designed and reviewed by

researchers who were skilled in qualitative methodology. The initial version was then

administered to two practising teachers who were not involved in the current study in order to

test its suitability and clarity. No difficulties in understanding were reported. A copy of the

interview schedule used in this study is provided below (see Table 12).

Table 12

Teacher Interview Schedule

Teacher's Name (pseudonym)

1. Tell me your perceptions of children with ASD.

2. Tell me what kinds of provisions you make in your teaching of children with ASD.

3. Are the children in your class grouped for reading? For any other subjects?

4. If any ASD child/children are included in a group, how do you decide which group to put them in?

5. Have any of the children with ASD in your class been transferred to different (higher/lower) groups during the year so far? If so, why is that?

6. How do you plan lessons for your ASD students? What are your standards for planning lessons?

7. What learning experiences do you plan to give your students with ASD?

8. What activities (if any) would you provide for your ASD child/children that you would not give to other typically developing children in your class? Why? (for general education teachers)

9. What activities (if any) would you provide for (some) ASD child/children that you would not give to others in your class? Why? (for special education teachers)

10. To what extent do you think your ASD child/children should be provided with different learning opportunities from those their typically developing peers have? (for general education teachers)

11. To what extent do you think (some) ASD child/children should be provided with different learning opportunities from what others have? (for special education teachers)

12. How do you ensure the success of your ASD child/children?

13. How do you assess the progress/improvement of your child/children with ASD?

14. Do you have any further comments you wish to make regarding ways in which you provide opportunities to learn for the ASD child/children in your class?

15. What do you think about your role in promoting the development of ASD children?

16. Can you promote ASD children's development in accordance with your expectations for them? How do you do that?

17. Do you consider that promoting ASD children's development is your responsibility? Why?

18. Do you consider that you can manage ASD children's disruptive behaviors effectively in your classroom? How do you do that?

19. Can you get through to the most unmotivated ASD children? How do you do that?

20. Can you teach ASD children effectively and improve their development effectively? How do you do that?

21. How much can the improvement of your ASD children be attributed to your work/teaching? Why?

22. How much of your ASD children's difficulties in learning are associated with your teaching? Why?

23. Do you think that your teaching is able to surmount all the effects resulting from outside influences, such as ASD children's family background? Why?

Procedures

Following ethical approval for the study (reference number: 011600) and with consent from the school principals and teachers, the researcher contacted and met with each teacher individually in June and July 2014. All interviews were conducted individually. Prior to the interview, a participant information sheet and the interview schedule had been provided to all interviewees. Each interview began with a self-introduction of the interviewer, the research topic, and the introduction of relevant rights (such as confidentiality) of the interviewee. Most of the interviews took 30 to 40 minutes, with a maximum of 55 minutes. All of the interviews were tape recorded for the purpose of ensuring the most accurate and complete transcriptions possible (Atkins & Wallace, 2012). After each interview, the researcher fully transcribed the audio recording into a Microsoft Word document. A copy of each transcript was sent to the relevant interviewee to ensure accuracy. The interviewees were given two weeks to make any modifications to their transcripts. It was considered that interviewees were satisfied with the content of their transcript if they had not replied within the two-week timeframe. As a result, no replies were received.

Data Analysis

Qualitative thematic analysis (Braun & Clarke, 2006) was used to analyse the data in the current study. This method is regarded as a descriptive qualitative approach (Vaismoradi, Turunen, & Bondas, 2013) which provides rich and detailed, yet complex, data (Braun & Clarke, 2006).

After the transcription, the researcher became immersed in the dataset through

multiple readings. Since this current study investigated three aspects of teacher beliefs, the

researcher read and re-read the teachers' responses by topics. Firstly, the transcribed data in

relation to specific interview questions for a particular topic were coded. Based on the

repeated readings, a coding system for the themes was developed in an inductive way. After

that, the relevant extracts including phrases or sentences that corresponded to each theme

were identified. This analytic approach was analogous with Thomas' (2006) study.

Once the coding and themes had been developed, another doctoral student who was

experienced in qualitative analysis was invited to check the clarity of the categories. A

sample of the raw text was given to her and she was asked to assign the text to the initial

categories developed by the researcher (Thomas, 2006). After discussion about any

discrepancies, the researcher and the postgraduate student reached a consensus of seven

major themes and relevant subthemes, except for one subtheme (capability of learning). The

disagreement surrounding the one exception was related to a difference of opinion about what

counts as a theme. However, the researcher chose to keep the subtheme that the two

researchers could not reach agreement on because she believed that this subtheme captured

important information in relation to the research questions. This subtheme will be presented

and discussed in a later section. Then, the supervisors' agreement was obtained in terms of

themes and subthemes. After that, the frequencies of each theme and subtheme were

calculated.

Results

The current study aimed to explore teacher beliefs about and self-efficacy in teaching children with ASD, and compare the beliefs of the L1, L2, and LS group teachers. This not only helped understand the beliefs teachers had relevant to autism teaching, but also helped explore the potential relations between teacher expectations for children with ASD and teacher beliefs. Hence, this study attempted to present the themes emerging from the teachers' responses in relation to each topic, with the emphasis on any differences between teacher expectation groups. The number of themes and subthemes for each topic were: (a) teachers' perceptions about children with ASD had one major theme and three subthemes, (b) teacher beliefs about how learning should be delivered to ASD students had three themes and four subthemes, (c) teachers' self-efficacy in teaching children with ASD had three major themes and six subthemes. Table 13 provides the list of themes and subthemes of each topic. In the following sections, findings from the interviews are presented by themes and by topics.

Table 13

Themes and Subthemes of Each Topic Coded from Responses of Teacher Interviewees

Topic: Teachers' perception about children with ASD

Theme: Unique learner

    1. A wide spectrum

    2. Learning capability

    3. Developmental features and learning needs

Topic: Teacher beliefs about autism teaching

Theme: Ability grouping and differentiation

    1. The role of student ability in grouping

    2. Cater for individual needs

Theme: Planning and monitoring student learning

    1. Plan lessons for ASD students

    2. Assessing the success of children with ASD

Theme: Visual support and social skills

Topic: Teachers' Self-efficacies in Teaching Students with ASD

Theme: Importance of teachers in promoting the development of ASD students

    1. Important role of teacher

    2. Sharing responsibility

Theme: Effectiveness of teaching and student learning

    1. Teachers' strategies and experience influencing teaching effectiveness

    2. Student learning outcomes and teachers' teaching

Theme: Cooperation

    1. Cooperation with parents

    2. Cooperation with colleagues

Topic: Teachers' Perceptions of Students with ASD

The first topic aimed to explore teachers' perceptions of ASD students because teachers' beliefs about particular students could be the filter for teacher expectation effects (Rubie-Davies, 2014), which has been discussed previously. The research findings showed that one theme emerged from the data—unique learner—which will be illustrated and discussed in the following section.

Theme: Unique Learner

Teachers reported that students with ASD have considerable individual variation and have their own unique way of learning, which was influenced by the characteristics of autism. Teachers across the three groups not only showed some similar perceptions of ASD students, but also showed different views: Although most teachers generally reported the diversification of individual students with ASD, teachers from different groups had their

preference when further talking about autism. The following subthemes illustrate teachers' perceptions of ASD students in the current study.

A wide spectrum. The interview findings suggested that the most frequent response from teachers was that students with ASD displayed a wide range of symptoms and showed various individual differences. The majority of teachers, disregarding which teacher group they were from (19/27), stated that the abilities of individual students with ASD were not all the same, even though these students all had ASD. For example, Jennifer (a general education teacher from the L2 group) said: "My experience of teaching autistic children in my time, they have all been very different from each other". Leah (a general education teacher from the L1 group) stated: "Autism includes a wide range, from high performing autistic children to very low performing." Likewise, Ella (a special education teacher from the LS group) reported: "They are all different, so many varied levels".

Learning capability. Another notable belief of children with ASD was made by teachers from the L2 group. All three teachers from the L2 group emphasised that children with ASD were capable of learning. They believed that ASD students had similar potential to succeed in comparison to typically developing children or children with other types of special needs. Tracy said: "They have different ways of learning, but they are certainly capable of learning." Jennifer stated: "They are capable of learning in different ways." Gianna responded: "They are capable of achieving just like any other students if the right teaching is put in place". However, it is worth noting that none of the teachers from the L1 and LS group mentioned about the learning capability of their ASD students.

158

Developmental features and learning needs. Teachers across the three groups talked about broader characteristics of ASD students. Whereas some teachers focused on the core characteristics of autism, others also emphasised some non-core characteristics and unique learning needs. Teachers from the three groups seemed to have different emphases when reporting.

Teachers from the L2 group all pointed out core characteristics of ASD students, and they talked about them in a positive way. For example, Jennifer (a general education teacher) reported: "I reckon it is very important to understand their characteristics. I am always aware of their communicational and interactional characteristics, and their behaviour problems, which helped me think about whether I did the right thing for them." Gianna (a special education teacher) stated: "You know, they have some social problems so I always try to create some social activities for them. They also have certain behavioural problems, but I think most of their behaviours can be managed."

Most teachers (11/15) from the L1 group talked about the core deficits of children with ASD. Mona (a general education teacher) said: "Children with autism may have some deficits in at least one of the following areas: social interaction, communication, and in cognitive development." Victoria (a special education teacher) responded: "Most children with autism live in their own world. They lack social interaction, they also have communication deficits." Except for the core deficits, some of the non-core characteristics of children with ASD were mentioned by teachers and the most frequently mentioned was their

sensory needs. Five teachers mentioned this. For example, Zoe (a special education teacher) said: "Many of them have issues with sensitivity regarding touch, light or sound. You must be very careful to check whether they would be anxious in such a kind of sensitive environment before you expose them to it."

Based on those perceptions about the core and non-core characteristics of children with autism, most teachers (10/15) from the L1 group further shared their views about the unique learning needs of children with ASD. Some teachers stated that ASD students prefer a routine. Daisy (a special education teacher) shared: "They like things the same so we keep things the same, with a little bit of change."   Likewise, Sophia reported: "Based on my knowledge, students with ASD do not like changes. We need to make sure that they are well informed before making any kinds of change. "

Although the teachers from the LS group still mentioned core characteristics of children with ASD, most of them (6/9) seemed to only emphasise their social deficits. Yasmin (a special education teacher) stated: "My perception of children with autism is that they all have their own different things…they are so different, not just on their social development, but also on their understanding of social interactions." Jean (a general education teacher) said: "Children with autism do not like social interaction. They are not able to make friends very quickly."

Topic: Teachers' Implicit Beliefs about How Learning Should Be Delivered to ASD Children.

This topic (the second topic) was designed to examine teachers' beliefs about autism teaching. It could help our understanding of the role of teacher beliefs in contributing to teacher expectation effects, and further contribute to our understanding of pedagogical practice (Rubie-Davies, 2008). Teachers' responses revealed three themes: ability grouping and differentiation, planning and monitoring student learning, and visual support and social skills. In the following sections, the three themes with the relevant subthemes will be presented.

Theme 1: Ability Grouping and Differentiation

The majority of teachers (24/27) in the current study talked about grouping and catering for individual student needs when they considered how learning should be delivered to ASD students. These teachers grouped all students in their classroom, including ASD students, and treated grouping as a way of delivering a course. However, teachers from the three groups seemed to differ in terms of the basis for grouping. At the same time, most teachers reported that they tried to meet the individual needs of their ASD students.

The role of student ability in grouping. Teachers' beliefs about how to group students with different abilities may partly reflect and represent teachers' beliefs about their teaching and student learning (Li, 2014; I. A. Wilkinson & Townsend, 2000). Teachers' responses revealed that the majority of teachers (24/27), regardless of group, reported that

they grouped students, and a student's ability or performance was the key for grouping.

Among them, some teachers (20/24) grouped students by subjects. A typical response was

from Jennifer, a general education teacher from the L2 group. She said: "I group students for

reading, maths, and writing so quite a lot of the day they work in different groups for

different things…he is grouped with children of like ability and for the same learning needs."

Other teachers (four teachers) grouped students in reading and other subjects. For example,

Yasmin, a special education teacher from the LS group, said: "I group students for reading

and topic studies. We have a lot of educational games where we let kids work in a small

group, a group of two or three, not too big. Generally, students with similar levels are put

into a group."

Teachers' responses also revealed that students' ability not only played a significant

role in grouping, but also in influencing teachers' beliefs about whether students needed to be

changed to another group. The two general education teachers in the L2 group tended to have

some flexibility with how they grouped students. They tended to change the particular ASD

student to a different group based on the topic and the student's need. Jennifer said: "In

maths and writing, the groups are more varied depending on which topics are being taught.

Although he probably stays in the same group most of the time, I may move him to a

different group if he is more familiar with the topic in another group." Likewise, Tracy

reported: "He is not always in the bottom group because he is pretty clever. So we do sliding

groups. He can slide in and do an activity in one group and he may stay with me for the next

group activity. It is mainly based on his needs."

162

The majority of teachers in the L1 group (14/15) shared that they had changed groups for students because of their improvement. For example, Leah, a general education teacher, said: "He is in the second reading group. He was initially in the first one and that group sees me daily. I could tell it was too much for him to come to me and read loudly every day because as I said before, his reading is very good so I have transferred him to the second one where he sees me twice a week." Zoe, a special education teacher, told the interviewer: "I have a student who was in the bottom reading group at the beginning of the year but now she is in the top one because she has made a great improvement in her reading."

Unlike the majority of teachers from the L1 groups who had moved students with ASD to different groups, five of six teachers from the LS group shared that they had not changed groups for students with ASD. The most frequent reason was that students had not yet made a great improvement. For example, Brody, a general education teacher, responded: "He has stayed reasonably the same. His achievement has not massively increased, but just like the rest of the students, their achievement is slowly increasing." In contrast, Sarah explained it from a different perspective. She replied: "Because he does not like changes. The changes make him upset. And the group members who work with him are quite well trained as to how to work with him."

Cater for individual needs. The interviewees' reports also revealed that grouping students did not mean that they were only providing learning activities for groups. In contrast, they also took individual student's needs into consideration. The majority of

163

teachers (three from L2 group, 12 from L1 group and five from the LS group) stated that they were aware of their particular ASD students' unique learning needs and tried to cater for these needs. For example, Tracy (from the L2 group) told the interviewer: "He cannot tolerate noise. So, if I have to play a CD for other students, I will ask him to go to the library or do some sand play at the same time." Mona (from the L1 group) replied: "We use i-stickers for rewards in my class. So if they do something wonderful they get i-stickers. I probably give him more for doing less...so he just needs more pulling along or joining in more." Likewise, Hanna (from the LS group) reported: "Everyone has something unique and you have to cater for it. For example, I have a student who has some difficulties in his motor abilities…he has some hands-on activity to do every day."

Theme 2: Planning and Monitoring Student Learning

All teachers in the current study reported that they had a basis for planning lessons for children with ASD and assessing the success of their ASD students. Whereas special education teachers emphasised planning for individual students, general education teachers put emphasis on planning for the class or for a particular group of students. The assessment tools teachers used and the ways they monitored ASD students were in accordance with their basis for lesson planning and their role.

Plan lessons for children with ASD. As mentioned, teachers' responses suggested that teachers' beliefs about planning lessons for students with ASD were mainly related to the teachers' role. That is to say, special education teachers and general education teachers held different beliefs regarding this aspect. Most special education teachers (11/13) treated

164

individualisation as the foremost point of lesson planning. For example, Daisy (from the L1 group) said: "Their lesson plans closely relate to their Individual education plan (IEP). So we teach them according to their IEP goals and reflect whether they have met those goals every six months." Likewise, Yasmin (from the LS group) reported: "Each student in my class gets an individualized educational plan … we made the IEP goals and then we plan lessons individually according to the IEP goals."

Unlike special education teachers who paid attention to individualisation, most general education teachers (11/14) seemed to place emphasis on planning lessons for the whole class or for the group. Take Leah (from L1 group), for example; she responded: "To be honest, I do not plan lessons for him. I plan lessons for my class as a whole. He just does what everybody else does, but I know what his strengths and weaknesses are." Three general education teachers from the L1 group seemed to plan lessons for the group rather than for the whole class. Sophia said: "He works in a group for reading, for example, he is in a group of four children. I plan for that group. I do not plan separately for his learning because he fits into the group very well."

Assessing the success of children with ASD. All of the teachers across teacher groups mentioned that they used formal assessments to assess the improvement of their students with ASD. However, the assessment tools teachers used were different. Overall, general education teachers used the same formal assessments to test students with and without ASD. The typical response from Jennifer (from the L2 group) was: "For him it is the

165

same way as for someone else, so we do running records or prompts reading test twice a year. We have formal testing that we do at the end of the year with all the children, like PATs and GloSS test for maths." Meanwhile, special education teachers were more likely to use special assessment tools that were designed for children with special needs. For example, Charlotte said: "We have the B Squared assessment programme and therapy monitoring sheets to measure the students. We do it twice a week to see their performance."

It is also worth noting that five general education teachers also mentioned assessment for social development, although they did not have a formal assessment tool for it. For example, Sean (from the LS group) said: "In terms of social achievement, we have a special team. We have a special education needs coordinator (SENCO) leader, and we sit together to talk about the learning goals especially social goals. We talk about what he is good at, what he is learning and what he needs to do next." Sophia (from the L1 group) commented: "I do not assess the progress socially, but I do give him opportunities for practice and then praise that. Again, I can see his progress. He used to…We have not heard about him anymore because he is so lovely now."

Theme 3: Visual Support and Social Interactions

Apart from teachers' different beliefs in grouping, planning for, and monitoring ASD students, teachers' responses also revealed that teachers differed in their teaching emphases when designing and providing learning opportunities to students with ASD. Some teachers mentioned the importance of visual support in helping student learning, while other teachers highlighted development of ASD students' social skills.

166

More than one-third of teachers (one from L2 group, four from L1 group and five from the LS group) emphasised the importance of providing visual support when teaching ASD students. For example, Tracy (from the L2 group) said: "I try to use visuals when possible… having a timetable for the term so there are not too many surprises. I also use the daily timetable…with this child in particular; he needs to be highly structured." Jayden (from the L1 group) stated that, "I try to use as many simplistic visuals as possible so I can keep the boys on track and I also inform them when the routine is going to change." Ella (from the LS group) reported: "They learn better if they've got something visually in front of them… IPAD is great for visual structure and we use it every day."

Some teachers (seven from L1 and five from the LS group) also reported providing social interactions for their ASD students. Aria stated: "Mostly he gets the same learning experiences that everybody gets, but there is also the learning experience around social interaction. I have some games that we play with Teddy Bear; everyone plays but [they] play for him". Kaylee reported: "I always encourage him to join in and be a part of the group. I want him to socialise as well as learn … He often puts his hand up and shares, and he becomes really confident with the activities, which is really nice."

Topic: Teachers' Self-efficacy in Teaching Children with ASD

Given that previous studies have shown that teachers' self-efficacy related to teacher expectations, which further influenced student learning (Li, 2014; Tschannen-Moran & Hoy, 2001; Wolters & Daugherty, 2007), this topic aimed to explore the possible relations between

teachers' self-efficacy in teaching ASD students and teacher expectations for these students. Research findings from the current study suggested that there were three themes: importance of teachers in promoting the development of ASD students; effectiveness of teaching and student learning; and cooperation. In the following sections, these three themes and relevant subthemes will be presented.

Theme 1: Importance of Teachers in Promoting the Development of ASD Students

Most teachers in the current study expressed their belief that: (a) they played a significant role in improving ASD students' learning; (b) they took a collective responsibility for autism teaching.

Important role of teachers. The majority of the interviewees (24/27) believed that they were essential in promoting the development of ASD students. Some teachers pointed out their crucial role in meeting the parents' expectations for their children and promoting the integration of the students into the class. For example, Gianna, a special education teacher from the L2 group, said: "I think it is an important role. I think parents place lots of trust in us and they want to see their children progress… so we try to do that. We also try to promote the mainstream schools which we are part of …the teachers [the general education teachers] know how to treat them when they see our children in the playground."

Some teachers tended to put more emphasis on their role in meeting individual students' needs and helping other students without ASD understand the difference between them and students with ASD. Victoria, a special education teacher from the L1 group

168

commented: "I think my role is very important. As I said, these students have communication deficits and if I can meet their communication needs, I can understand their world. And I feel if I meet their communication needs and social needs, they can make huge progress and they will be ready to go to the next class [the higher level class]." Brody, a general education teacher from the LS group, shared his view in terms of the importance of his role in meeting ASD students' distinctive needs. He said: "I think my role is very important because I feel if the teacher is not open and accepting of each student's unique qualities, children will know that… So understanding that he sometimes does need some time and space to calm down." He further emphasised: "From other children's perspectives, getting them to realise that everyone deals with things differently. And that is his way of dealing with certain issues."

There was one exception. Riley, a general education teacher from the L1 group, believed that her role was very limited. When asked why she held this perception, she said: "I am not the expert. I have never been trained. When I entered in teachers' college, I did not receive any training on how to deal with learning disabilities and autism." The interviewer prompted her about whether she had had any further in-service training. She said: "I have never participated in any workshops about autism. It does not get a priority. Nothing has been done like that." Then the interviewer asked her how to deal with the learning needs of students with ASD, she said: "Trial and error. Experience and listening to other people, but it was really frustrating."

Sharing responsibility. All interviewees reported that they took responsibility in promoting ASD students' learning; however, they also mentioned that other people working or living with students with ASD still needed to be responsible for ASD students' learning. Some teachers emphasised the shared responsibility of parents. The typical response from Jayden (from the L1 group) was: "It is both my responsibility and parents' responsibility. I mean, we have limited time to work with those students, normally six hours per day so we just have to do what we can do at that time. And always keep in mind that establishing a good relationship with the family would make things much easier and effective." Other teachers put the emphasis on collective responsibility. For example, Yasmin (from the LS group) said: "I won't say it is entirely my responsibility. It has to be a combination of people with them so it can never be the responsibility of one person…All people who come down to Star School [pseudonym of the school] should be involved in looking after them**.**"

Theme 2: Effectiveness of Teaching and Student Learning

Although nearly all teachers emphasised their role in enhancing ASD students' learning, they also reported that several factors may influence their teaching effectiveness. Most teachers mentioned that their teaching strategies and experiences were the determinant of teaching quality. They also expressed their views in terms of the relations between their teaching and students' learning outcomes, which will be discussed further.

Teachers' strategies and experience influencing teaching effectiveness. Teachers' teaching effectiveness in the current study was explored in two ways: teachers' beliefs about whether and how (to what extent) they could manage ASD students' disruptive behaviours

170

effectively; and whether and how they could teach the most unmotivated ASD students. The majority of teachers responded to those questions in a positive way. Firstly, most teachers (three from L2, 13 from L1 and four from the LS group) across teacher groups stated that they were able to manage the disruptive behaviour of ASD students. Secondly, 20 teachers who had experience of working with ASD students (two from L2 group, 12 from L1 group and six from the LS group) reported that they were able to teach the most unmotivated students. Teachers' responses revealed that teachers' strategies and experience were the key in influencing teaching effectiveness.

Most teachers mentioned that the reason why they could teach ASD students effectively was because they had plenty of teaching strategies and they were experienced. When talking about her ability in managing students' disruptive behaviours, Joy, for example, a special education teacher from the L1 group, said: "Yes, I can. That's what I am trained for and I guess consistently that my experiences and my studies have helped me deal with difficult behaviours. And I worked with those people too, those specialists. We share many strategies all the time." Similarly, Tracy, a general education teacher from the L2 group, responded: "I think his behaviour is not unmanageable. Generally, I know how to calm him down when he is angry or anxious because I had experience before." Likewise, when it comes to teachers' beliefs about their ability in teaching the most unmotivated students, Gianna (from the L2 group) shared: "I think they all have an interest in something so we can

always include their interest as motivation. The thing is that you need to use different strategies or approaches to find out their interest. So you need to be knowledgeable. ''

A few teachers also attributed their ineffective teaching to insufficient strategies and experience. For example, when asked about whether he could manage ASD students' disruptive behaviour effectively, Sean (from the LS group) responded: "Not all the time. I think to a certain extent, no one [general education teacher] can. You need specialists or a trained teacher aide who knows how to deal with those things. We definitely need some professional development around this." Similarly, Kaylee (from the LS group) stated: "Sometimes I can, sometimes I cannot. I only began work last year and he is my first student with autism. I think I still have a long way to go in terms of managing those students effectively."

Student learning outcomes and teachers' teaching. The current study aimed to investigate relations between student learning outcomes and teachers' teaching. Students' learning outcomes were divided into positive learning outcomes (student achievement) and negative learning outcomes (students' learning difficulties). Teachers' responses will be presented, respectively.

With regard to the relations between student improvement and teachers' teaching, teachers' responses can be categorised into two approaches. The first approach was that teachers tended to believe that students' learning achievement could be partly attributed to their teaching, with the emphasis on teamwork. Most interviewees across the teacher groups

(three teachers from L2 group, 13 teachers from L1 group and three teachers from the LS group) held this perception. For example, Jennifer (a general education teacher from the L2 group) shared: "I like to think that definitely some of it was because if you are doing that, taking them from where they are and providing learning to the next step, they can make progress. I think the teacher has put a lot of input in it. Support from other people and family is also important so it is not just the teacher." Similarly, Zoe (a special education teacher from the L1 group) responded: "It is actually team work. As a teacher, my part is to do the planning, and putting strategies, using interventions into the place…so it is a team effort, with the support staff and guidelines…I think 60% of their improvement comes from me."

The second approach was that teachers (six teachers from LS group and two from the L1 group) thought that it was hard to identify how much of the students' improvement could be attributed to their work. For example, Noah, a special education teacher from the LS group, commented: "You cannot tell. It is a mystery. You really cannot tell. You never know because it does not come out with your name. If a child can read a booklet you cannot be sure exactly how they achieved it." Sean, a general education teacher from the LS group replied: "This question is tricky. I think if the teacher can make improvement in both the learning and behaviour aspects of autistic students, it will be a huge success in terms of his teaching. I cannot take credit for it because my autistic children they are quite good. I cannot describe how much their improvement would be due to my teaching."

When talking about how much students' learning difficulties can be attributed to teaching, four teachers (one from L2 and three from the L1group) stated that they hoped none of the students' learning difficulties related to their teaching. Take Daisy (a special education teacher from L1 group), for example; she said: "I do not think any of my teaching does not help them, but sometimes the environment of the class does not work when you have students that are noisy. So I think it is not the teaching itself but the teaching environment."

Some teachers (two teachers from L2 group, 10 from L1 and four from the LS group) believed that even though they had tried their best to teach the students, sometimes it was difficult to address students' learning difficulties, although those difficulties were not related to their teaching. The typical response from Joy, a special education teacher from the L1 group, was: "For me, I just try to create a good atmosphere for my students and minimise the distractions. I try to make it easy for them. I try to make it fun. I use my personal strategies to ask myself and reflect myself…yet you know sometimes even if you worked very hard, you cannot address everything for them since they have autism."

The other seven teachers (two from L1 and five from the LS group) stated that some of the students' learning difficulties may be related to their teaching. This was partly because some teachers had certain personal characteristics. For example, Grace (a general education teacher from the LS group) shared: "My voice sometimes might be a little bit difficult for him because it is loud. When he just came to my class at the beginning of the year, he would not listen well because of my voice… That's probably one thing [that is] difficult." Another possible reason was that teachers lacked sufficient strategies. Ada, a general education

174

teacher from the L1 group, expressed that: "I think his writing probably would have improved more. I just do not know the tools, you know, I do not know the strategies. I tried a lot of ways, but I only have three terms of experience so I think other teachers might help him more."

Theme 3: Cooperation.

Teachers' responses regarding cooperation received attention during the interviews. That is to say, cooperation was mentioned by teachers across the three topics. Since it was emphasised most frequently regarding this topic—teachers' self-efficacy in teaching students with ASD—it was included here. Most teacher interviewees across the teacher expectation groups talked about two types of cooperation several times. The first one was the cooperation with students' parents, and another one was the cooperation with colleagues.

Cooperation with parents. Most teachers talked about the importance of cooperation with parents several times. It was especially emphasised in terms of teachers' perceptions regarding the relations between the impacts of teaching and external influence on students' learning, and teachers' perceptions regarding their ability in promoting the ASD students' development in accordance with their expectations.

When it comes to whether teaching could overcome the impacts of external influence on student learning, a majority of teachers (three from L2 group, 13 from L1 group and six from LS group) believed that their teaching would not surmount everything, especially the influence of the students' family. Meanwhile, they all emphasised that the best practice in

teaching children with ASD was to work with families who have children with ASD. In other words, the most effective teaching should include teachers and parents working together. For example, Gianna, a special education teacher from the L2 group, said: "I do not think that our teaching can overcome everything. We need to be on the same page as the family." Likewise, Aria, a general education teacher from the L1 group, shared: "I am very lucky to get the support from mum. Whenever he has a new problem, mum always comes to me, and discusses the teaching strategies with me. Working together with mum makes me feel that I have strong backup in teaching him."

Five teachers (four from LS group and one from L1 group) believed that the family background and influence was much stronger than school teaching, but they still placed emphasis on teacher-parent cooperation. Take Noah's (a special education teacher from the LS group) response, for example: "I think the family background is the biggest slice of the pie of a child. You can make a difference and you can show them in different ways, but as a teacher, you cannot ever surpass the impact of the family." He further explained the reason family has a powerful impact on teaching and attached importance to family and teacher cooperation. He commented: "It is ideally that we always work with parents, but sometimes parents may be not that cooperative, and that will be a problem…We can share what we do successfully here and we hope that they also follow up what we do here, but we cannot tell people how to be parents. So it comes back to the cooperation between parents and us."

Teachers also emphasised cooperation with parents when talking about their perceptions regarding their ability in promoting the ASD students' development in

176

accordance with their expectations. Most teachers across teacher expectation groups (three from L2 group, 13 from L1 group and four from the LS group) believed that they were capable of pushing students to meet their expectations. When teachers were further asked to explain the reason, the most frequent response was related to close cooperation with parents. For example, Tracy (a general education teacher from the L2 group) shared: "I think I can [promote the students' development in accordance with their expectations] because I share my expectations with parents and we try to have the same expectations for him. I have contacted his mum every day and we share lots of things, what happened at school, what happened at home…if he did something wrong, and I told mum that he is not allowed to play IPAD at school, mum would not allow him to play IPAD at home as well…"

Chloe (a special education teacher from the L1 group) not only talked about cooperation, but also shared how to motivate parents to be a part of the student's education. She commented: "Communication with family is very important. I think the more you educate the parents, the development of the students is more likely to meet our expectations…I keep sharing with family what are successful things that we do here and encouraging them to do the same at home. Some parents may be reluctant to cooperate at the very beginning, as long as you encourage them and show them what their kids can do here, they would like to be working alongside you."

Cooperation with colleagues. Teachers reported the importance of cooperation with their colleagues, including, the language therapist, SENCO, and the teacher aide. For

example, when teachers were asked about any further comments they wished to make regarding autism teaching, Gianna (a special education teacher from the L2 group) stated: "I would like to emphasise teamwork again. You know, I am just a part of the big circle. I cannot do it alone. I am lucky to have a very supportive team, and I got lots of help from them. Our team helps me become more confident to work with those kids." Likewise, Ada (a general education teacher from the L1 group) reported: "As you know, Linda [the pseudonym of the SENCO of her school] is very supportive. She suggested to me to take the two-day course about autism and she gave me lots of help when needed. We often talk about him [the child with ASD] and I know that I always get back up from her."

In addition, nearly all the teachers who had a teacher aide in their class clearly stated that the teacher aide was a significant part of the teamwork. For example, Leah, a general education teacher from the L1 group, said: "I think my role, as a teacher, is to create a learning environment in which he can be successful. You know, that is the biggest one. His teacher aide is responsible for his progress because she is amazing in supporting him." Similarly, Ella, a special education teacher from LS group, talked about the role of the teacher aide and she stated: "The teacher aide works alongside us and we are a team. Although the teacher will implement the planning, the teacher aides will help with that so I believe that the role of teacher aide is really important." Yasmin, a special education teacher from the LS group, implied that lacking enough training might be a weakness of teacher aides. She told the interviewer: "The teacher aide in my classroom is very helpful, and if they are more trained, it will be even better."

178

Discussion

The current study was designed, firstly, to provide an illustration of teacher beliefs about autism teaching and teachers' self-efficacy in teaching children with ASD, and, secondly, to identify whether teachers with different expectations would differ in their beliefs about these aspects. Of the seven themes identified from the teacher interviews, the results showed that the comments made by teachers about their beliefs varied across their expectation groups (as categorised in Study Two) for four of the themes because they varied for eight out of the ten subthemes (of the four themes). The four themes were: "unique learner", "ability grouping and differentiation", "effectiveness of teaching and student learning", and "cooperation". However, for the theme of "planning and monitoring student learning", the teacher responses appeared to vary by role (general education teachers versus special education teachers) rather than teacher expectation group. Lastly, for the "visual support and social interactions" theme, and "importance of teaching in promoting the development of ASD students" theme, teachers across the three teacher expectation groups (who varied in number in their responses to these themes/subthemes) showed similar views.

The findings for each of the seven themes will be discussed, beginning with themes that varied by teacher expectation groups. In order to facilitate further comparison, the number of teachers who made similar comments regarding these themes and/or subthemes for each group is presented in Table 14, showing the proportion of teachers' responses in relation to the relevant groups. Discussion in relation to the theme in which teacher role appeared to

play a part in teacher beliefs will then be covered. Finally, the themes for which (some)

teachers showed a level of agreement will be discussed.

Table 14

Agreements on Subthemes by Three Groups of Teachers

Theme	Subtheme	Number of teachers			Percentage of teachers related to the relevant group		
		n			%		
		L2	L1	LS	L2	L1	LS
Unique	A wide spectrum	3	11	6	100%	79%	60%
learner	Learning capability	3	0	0	100%	0	0
Ability	The role of student	3	14	7	100%	100%	70%
grouping and	ability in grouping						
differentiation	Cater for individual	3	12	5	100%	86%	50%
	needs						

Importance of teaching in promoting the development of ASD students	Important role of teachers	3	13	8	100%	93%	80%
Effectiveness of teaching and student learning	Student learning outcomes and teachers' teaching	3	13	4	100%	93%	40%
Cooperation	Cooperation with parents	3	13	6	100%	93%	60%

Teacher Beliefs about Unique Learners

Previous research has shown that students with ASD included a wide range of behaviours and individual ASD students varied from each other (American Psychiatric Association, 2013). These results were supported by the interview findings since the majority of teachers within the three groups held similar views. However, teachers from the three groups tended to have different emphases in terms of their further perceptions about ASD students. Teachers who expected their students would be able to achieve two levels of improvement in a one-year period tended to emphasise the learning capability of ASD students and their core characteristics. Teachers who expected students would improve by one level of achievement were more likely to emphasise the core characteristics of autism and some unique learning needs of ASD students. Compared to teachers from the L1 and L2 groups, teachers who expected students would maintain the same level for the year were inclined to pay attention to ASD students' social impairment. In conclusion, teachers from the L2 group appeared to hold more favourable perceptions about autism because they emphasised commonality and capability while teachers from the L1 group held what could be considered a relatively neutral view about autism because they perceived the deficits of autism and some special learning needs for children with ASD. Meanwhile, teachers from the LS groups seemed to hold relatively non-comprehensive beliefs about autism because they did not provide holistic information about the core characteristics of autism.

The findings have some implications. Firstly, teachers who had more comprehensive

knowledge about autism tended to have higher expectations for children with ASD, which

may support the idea that there are close relations between teacher knowledge, teacher

expectations, and teacher beliefs (e.g. Ertmer & Ottenbreit-Leftwich, 2010; Hamre et al.,

2012). In addition, it was undesirable that teachers from the LS group did not have sound

and favourable beliefs about autism. It was suspected that those teachers lacked adequate

knowledge of autism. Since teachers are only able to provide appropriate instruction and

adapt the environment to fit the individual needs of students with ASD on the condition that

they are knowledgeable and skilful (Simpson & Myles, 2008), it seemed that enhancing LS

group teachers' knowledge of autism must remain a matter of some urgency.

Teacher Beliefs about Grouping Students and Differentiation

It is not surprising that most teacher interviewees in the current study grouped

students for reading and other subjects because New Zealand has been shown to be the

country with the greatest incidence of within-class ability grouping among 32 countries

(Wilkinson & Townsend, 2000). It was also consistent with a previous study conducted in

New Zealand which showed that the majority of teachers grouped students by ability for

reading and mathematics (Rubie-Davies, 2008).

Although most teachers in the current study grouped students mainly based on

students' ability, teachers from the three expectation groups seemed to hold different views in

terms of group movement. It appeared that teachers from the L2 group tended to be flexible

when grouping students. Teachers from the L1 group were inclined to transfer the individual

184

students to a higher group when students had made progress while most teachers from the LS group did not change students' groups. Very little research has been conducted to explore teachers' beliefs about changing the group for students with ASD. The limited research has shown that the reading achievement of students with ASD would be improved by studying in mixed-ability teams and same ability pairs (Kamps, Leonard, Potucek, & Garrison-Harrell, 1995; Slavin, Stevens, & Madden, 1988), which means that placing those students into both a mixed group and a homogeneous pair may be more beneficial for their development.

The findings further implied that students with ASD who studied with the L2 group teachers were more likely to have more opportunities to work and study with their peers who had different abilities, which could further improve their learning (Slavin et al., 1988; Rubie-Davies, 2008). Meanwhile, students who studied with L1 group teachers may have some opportunities to study with peers in a higher ability group when they have made some progress in learning. By contrast, students who studied with the LS teachers were more inclined to stay in the same group. Therefore, they may have comparatively limited time to work with their peers with different abilities and may have a more limited chance to challenge themselves. In other words, they were more likely to be exposed to low-level and repetitive activities (Slavin, 1993). As a result, their achievement may not improve dramatically in comparison to their peers who studied with teachers from the L1 and L2 groups.

Meanwhile, most teachers in this study reported that they were aware of individual students' needs and took their needs into consideration when planning and preparing learning activities for students. It is worth noting that the large proportion of teachers holding this view was mainly from the L1 and L2 groups. A previous study showed that students with ASD could not have adequate development if teachers could not cater for their individual needs (Kluth, 2010). The current study may suggest that most teachers—especially teachers from the L1 and L2 group—tried to provide appropriate learning activities for their ASD students. This may further increase the possibility of success for students with ASD, as their individual needs and strengths were matched in school (Conroy, Stichter, & Gage, 2011).

Teacher Beliefs about Teaching Effectiveness and Student Learning

Teachers' responses revealed that a large proportion of teachers from the L1 and L2 groups and a small proportion of teachers from the LS group were confident in their abilities in teaching ASD students effectively. This is mainly because these teachers reported that they were able to manage students' disruptive behaviours and the behaviours of the most unmotivated students. Such beliefs teachers held were consistent with previous research regarding teachers who had a high sense of personal efficacy (Berman, 1977; Collier, 2005). This may imply that, compared with teachers from the LS group, teachers from the other two groups may have a higher sense of personal efficacy in working with children with ASD. Previous studies showed that teachers with a high level of personal efficacy were more likely to use different strategies or approaches to teaching and consistently support students (Allinder, 1994), which further increased desirable student performance (Emmer & Hickman,

186

1991). It appeared that students with teachers from the L2 and L1 group were more likely to reduce their undesirable performance and were more likely to increase the possibility of positive learning outcomes than their peers with teachers from the LS group.

In addition, teachers were more likely to believe in their abilities to deal with students' unfavourable performances on the condition that they had more strategies to teach children with ASD or had more experience working with children with ASD, which was consistent with Accardo's research (2015). A previous study showed that teachers servicing children with ASD reported high levels of emotional burnout when they did not have the necessary knowledge and skills to address their students' challenging behaviour (Hastings & Brown, 2002). Ensuring that teachers working with ASD are equipped with sufficient and adequate knowledge, and helping them get some experience of working with students with ASD, has become imperative.

Teachers who believed that their teaching was related to students' positive learning outcomes mainly came from the L2 and L1 group since the proportion of teachers from those two groups was much higher than the proportion of teachers from the LS group. This finding might suggest that teachers who expected their students to make some degree of improvement were more likely to hold favourable outcome efficacy in working with students with ASD than their counterparts who expected their students to stay at the same level of reading, which was analogous with the findings of previous research (Archambault et al., 2012; Li, 2014).

In contrast, the large proportion of teachers who believed that their students' learning difficulties were related to their teaching was mainly from the LS group rather than L1 and L2 groups. This finding may imply that teachers who expected their students to maintain the same level of reading were more likely to hold a lower level of outcome efficacy than their counterparts who expected their students to make some progress in reading. Teachers' low sense of efficacy may influence student learning in a negative way (Ross, Hogaboam-Gray, & Hannay, 2001).

Teacher Beliefs about Cooperation

When asking about teachers' teaching efficacy (teaching efficacy here refers to teacher beliefs about the influence of external factors on the impact of teaching; Soodak & Podell, 1996), nearly all teachers from the L1 and L2 groups believed that teaching was more influential than external factors, and they put emphasis on the importance of family involvement and cooperation in teaching students with ASD. Previous research has suggested that teachers should work closely with the families of children with ASD, which is not only because it is regarded as best practice, but also because parents know their children in ways teachers do not (Kluth & Yoshina, 2010). This research has highlighted the significant role of teacher-family cooperation.

In contrast, a large proportion of teachers who believed that external factors may overcome the influence of teaching were mainly from the LS group. This finding may mean that teachers from the LS group were less likely to have a high sense of teaching efficacy than their counterparts from the L1 and L2 group. Although they mentioned the importance of

188

teacher-family cooperation, they talked more about uncooperative families in their interview. It was suspected that those teachers established poorer relationships with students' families in comparison with their counterparts who emphasised positive teacher-family cooperation. This research gives rise to an interesting investigation about whether there is a relationship between teacher sense of teaching efficacy and cooperation between teacher and student families.

Overall, teachers' responses of the influential role of their teaching and external factors in the development of students suggested that nearly all teachers from the L1 and L2 group and some teachers from the LS group held a realistic perception about their teaching efficacy. That is, although teachers' teaching played a significant role in influencing student learning, some external factors such as students' family background and family support would have some impact on student learning. Given that there is not yet any standard by which to judge the level of teacher beliefs about the influence of external factors on the impact of teaching, it might not be suitable to appraise the relative value of this finding.

Previous studies showed that teamwork and cooperation among teachers with different disciplines and parents were a necessary and effective practice in teaching children with special needs (Friend & Cook, 2007; Kochhar-Bryant, 2008; Resetar, Noell, & Pellegrin, 2006). This has been confirmed in this study since all the teachers emphasised the significant role of teamwork in teaching children with ASD. In addition, this study may also imply that

it would be largely beneficial for the students if teachers and other team members and the parents of children with ASD worked on the same side.

It is also worth mentioning that the important role of the teacher aide has been highlighted by some teachers in this study, which may indicate that the teacher aide reduced the workload of class teachers in teaching students (Department for Children, Schools and Families, 2009) with ASD. However, previous research (Rubie-Davies, Blatchford, Webster, Koutsoubou, & Bassett, 2010) has shown that the quality of interactions between teacher aides and pupils was different from the quality of interactions between teachers and pupils, especially in terms of developing students' thinking. For example, when students answered incorrectly, teachers were more likely to provide clues to students and encourage them to think about the question further, whereas teacher aides were more likely to supply students with the answer directly (Rubie-Davies et al., 2010). There is a need to further explore the effectiveness of teacher aide-student interaction. In addition, the current study may also reveal that the preparedness of the teacher aide needs to be further examined.

Teacher Beliefs about Planning and Monitoring Student Learning

Teachers' responses with regard to lesson plans and monitoring students showed that teachers' beliefs about these aspects were not related to teacher expectations, but related to teachers' role (working as special education teachers or general education teachers). With regard to teacher beliefs about planning, general education teachers tended to emphasise planning for the whole class or group, whereas special education teachers tended to focus on individual students' needs. This may be due to the different teaching goals of the different

190

types of education. On the one hand, "general education was founded on the belief that all

children should be schooled, and that the content of schooling should be the same for

everyone" (Kauffman & Hallahan, 2011, p. 161). This is also the case in terms of inclusive

education because inclusive education is a part of general education (Heward, 2009). On the

other hand, special education aims to provide the appropriate education for individual

students to meet their individual needs (Kauffman & Hallahan, 2011). It may be also due to

the different teacher-student ratios. In New Zealand, special education teachers normally

have very few students in their class (a maximum of eight students) whereas general

education teachers have around 30 students in their class. Compared to their general

education counterparts, it is more likely and feasible for special education teachers to plan

individual lessons for their ASD students.

The role of the teacher appeared to play a part in teachers' beliefs about planning

lessons for ASD students in the current study. The teachers' role and relations with beliefs

about planning has not previously been studied. Previous research has shown that low

expectation teachers differentiated a lot in the types of activities they gave students. Students

they considered low level got very boring, repetitive activities; those they considered high

level, got fun, exciting activities. High expectation teachers gave all students challenging

learning activities. They did not differentiate in the types of activities that they gave students.

(Rubie-Davies, 2008, 2014). This may be partly because this study only focused on teachers'

expectations for individual children with ASD while the previous studies examined teacher

expectations for typically developing students at the class level. Future studies are needed that examine possible factors influencing teacher beliefs about autism teaching.

The teachers' role also appeared to relate to teachers' beliefs about assessing and monitoring the development of ASD students. General education teachers were more likely to use national standardised tests to assess the development of students with ASD while special education teachers were inclined to use the specific assessment tools that were designed for students with ASD. This is not surprising since general education schools and special education schools have differing assessment systems. Unlike special education teachers who had specific measurements to assess the social development of students with ASD, general education teachers often lacked such forms of assessment. So it is noteworthy that some general education teachers also paid attention to assessing the social development of students with ASD. This finding might suggest that teachers were aware of the social impairment of ASD students and highlighted the importance of their role in promoting the social development of such students.

Teacher Beliefs about Their Role in Promoting the Development of ASD Students

Teachers' responses regarding their role in promoting the development of students with ASD appeared to not vary by teacher expectation groups because nearly all of the teachers acknowledged that they played an essential role in promoting student development. Although teachers' self-efficacy was not measured in the current study, the teachers' self-report appeared to match what the literature indicates is associated with a high sense of efficacy because most teachers in this study believed that they played a significant role in

192

promoting student learning (Ashton, 1984). Such high efficacy may further benefit student

learning because teachers with a high sense of efficacy may prepare a more specific plan for

children with ASD, have a more open mind, and may be more tolerant with their students if

and when they were struggling (Ashton & Webb, 1986; Gibson & Dembo, 1984). In

addition, it is worth noting that one teacher, Riley, held a different view regarding her role.

Her responses support the findings of previous studies that showed that insufficient

knowledge about autism could influence teachers' self-efficacy (Engstrand & Roll-Pettersson,

2014) and might further increase teacher burnout (Ruble et al., 2011). Again, the findings

may highlight the importance that all teachers should be equipped with knowledge and skills

about teaching all children (Florian, 2014).

Previous studies have suggested that teachers' sense of responsibility for student

learning is a necessary factor in teachers' sense of efficacy (Kozel, 2007; Woolfolk Hoy et al.,

2006). The findings of the current study may suggest that, firstly, teachers reported that they

took responsibility for the development of ASD students. When teachers believed that

students' improvement was their responsibility, and they believed students were able to learn,

teachers were more likely to use different strategies to instruct and manage the classroom

(Roehrig, Turner, Grove, Schneider, & Liu, 2009). As a result, students were more likely to

experience better achievement when they studied with those teachers (Lee & Loeb, 2000;

Stipek & Daniels, 1988). Secondly, teachers did not take entire responsibility, but mentioned

the responsibility of other people who worked or lived with ASD students. This may be

partly because teaching students with special needs requires close cooperation among teachers, other professionals, and parents of students (Smith & Tyler, 2010). More research regarding teachers' sense of responsibility for student learning is needed.

Teacher Beliefs about Visual Support and Social Interactions

As mentioned previously, some teachers across the three groups showed a level of agreement in terms of their beliefs about visual support and social interactions. Previous studies have shown that visual supports can reduce the cognitive, communication, and social impairment of students with ASD (Hodges et al., 2006), and they are used to encourage ASD students in communication and learning (Hayes et al., 2010). It is encouraging that some teachers in the current study talked about the use of visual supports, which may imply that students of those teachers were able to use their relative visual-spatial strengths (Johnston, Nelson, Evans, & Palazolo, 2003) to learn effectively.

Some teachers appeared to emphasise the importance of social skills for ASD students. Since social impairment is one of the core characteristics of people with ASD, and all teachers in the current study have talked about the social deficit of ASD students, it is understandable that some teachers focused on this field. It may imply that those teachers have some understanding about the social characteristics of ASD. It follows, therefore, that those teachers would aim to develop their students' social skills by creating some activities for them designed to promote their social development.

194

Summary

In the current study, the beliefs of teachers with differing levels of expectations in relation to the perception of ASD students, delivering learning opportunities to ASD students, and self-efficacy in teaching those students has been explored and examined. Unlike the previous studies, which showed a clear picture in which teachers with a different level of normative expectations for all the students in the class held different beliefs about teaching and students' learning (Li, 2014; Rubie-Davies, 2008), teachers' self-report in the current study seemed to reveal a somewhat more complicated picture.

Firstly, teachers from different expectation groups tended to hold different beliefs about the themes of "unique learners" and "ability grouping and differentiation" and most of their subthemes. That is to say, teachers with different expectations were inclined to have different perceptions about students with ASD, and have different beliefs regarding grouping and planning activities for ASD students. To be specific, teachers from the L2 and L1 group tended to have a relatively comprehensive knowledge and have more favourable perceptions about students with ASD; they were more likely to change students to a different group based on the students' abilities and needs in comparison to teachers from the LS group. In addition, a large proportion of teachers from the L2 and L1 group were inclined to cater for the individual students' needs when planning activities for them than their LS group counterparts. Consequently, studying with teachers from the L1 and L2 group, students

might have more possibility to work with peers with different abilities, and meet their individual needs, which, in turn, can promote their learning.

Secondly, most teachers in this study shared similar beliefs with regard to the themes of "effectiveness of teaching and student learning" and "cooperation" and most of their subthemes. Specifically, most of them believed that they were able to teach and manage ASD students and promote those students' development in accordance with their expectations. In addition, most teachers believed that student achievement was related to their teaching (at least partly) whereas they believed that student learning difficulty was not related to their teaching. Moreover, most of them acknowledged that, although some external factors such as student family background would have some impact on student learning, it could not overcome the teaching influence. Meanwhile, teachers emphasised cooperation with students' parents. Those beliefs were consistent with existing research about teachers with high levels of teacher efficacy (Ashton, 1984; Collier, 2005), which may mean that the majority of teachers in the current study appeared to exhibit high teacher efficacy.

It is also worth mentioning that the majority of teachers who held such favourable beliefs were from the L1 and L2 group, rather than from the LS group. Assuming those self-reported beliefs were accurate, it may reveal that teachers who expected their students would make some level of increase in reading in one year were more likely to have more favourable beliefs regarding their abilities to teach children with ASD in comparison to teachers who expected their students would maintain the same level in reading. The findings of the current

study may reveal that there may be a relation between teacher expectations and teacher self-efficacy, as has been proposed by Woolfolk and colleagues (Woolfolk Hoy et al., 2009).

Thirdly, the original interview schedule used in the current study was not designed to locate the possible relations between teacher role and teacher beliefs, but the findings suggested that teachers' beliefs regarding the theme of "planning and monitoring student learning" differed according to the teachers' role. That is to say, special education teachers and general education teachers appeared to hold different views about planning of lessons and assessment of the development of students with and without ASD. Whereas special education teachers tended to emphasise individualisation, general education teachers were inclined to focus on commonness. This may be partly because of the different roles and duties between those two kinds of teachers, and may be partly because special education teachers and general education teachers and their relevant schools had different values of teaching. Consequently, those two types of teachers could have different assessment tools to evaluate students with ASD.

Finally, teachers across the expectation groups shared similar views regarding the theme of "importance of teachers in promoting the development of ASD students" and "visual support and social skills" and the subtheme of "cooperation with colleagues". Teachers normally emphasised their role in enhancing student learning and the importance of teamwork. They also put emphasis on the importance of providing visual supports to ASD students and developing those students' social skills.

197

In conclusion, although teachers from different expectation groups shared some similar beliefs about autism teaching and self-efficacy, they also held different views. The current study appeared to show that teachers who expected their students would make some level of improvement in reading were more likely to report providing more learning opportunities to ASD students and were more likely to believe in their abilities to promote the development of students with ASD than their counterparts who expected their students to stay at the same level. This finding may suggest that teacher expectations were partly related to teacher beliefs about autism teaching and teacher self-efficacy.

The next study will focus on teacher interactions with students with ASD. Previous studies have shown that teachers may transmit their expectations to students through their behaviour (Brophy & Good, 1970; Cooper & Good, 1983; Rubie-Davies, 2007), but no research has been located that has focused on children with ASD. The final study observed teachers' verbal behaviours towards students with ASD. It aimed to examine the role of teacher behaviour in communicating teacher expectations to individual students with ASD.

Chapter Six

Study Four: Exploring Teachers' Communication of Differential Expectations for

Children with Autism Spectrum Disorder

The previous chapter explored teacher beliefs about teaching children with autism

spectrum disorder (ASD), and teachers' self-efficacy in working with ASD students,

suggesting that teacher beliefs regarding autism teaching often varied with their level of

expectations. Study Four was designed to explore the classroom verbal behaviours of the L2,

L1 and LS group teachers identified in Study Two. It was predicted that teachers with

different level of expectations for children with ASD would interact with individual students

differently in terms of their verbal behaviours. Hence the research question for this study

was:

How do teachers interact with students with ASD for whom they held specific

expectations?

Method

Participants

The participants in this study were 11 special education teachers and 12 general

education teachers (totalling 23 teachers) who worked with students with ASD. They came

from 6 general education schools and 4 special education schools in the Auckland area. The

participants were also part of Studies Two and Three. Initially, all the participants in Study

Two were recruited for the current study. However, four teachers withdrew, for different

reasons: one teacher's (Sarah) student with ASD had transferred to another school; one

teacher (Ella) refused to continue in the study on behalf of her particular student (one of her

students was sensitive to the classroom environment and could easily become aggressive if

someone new was in the classroom); one teacher, Riley, stated that the particular student was

sick; and another teacher, Noah, withdrew without explanation. Therefore, the current study

included three teachers from L2 group, 13 teachers from L1 group and seven teachers from

LS group. The demographic information for those 23 teachers is provided in Table 15.

Table 15

Demographic Information and Pseudonyms for 23 Teachers

Teacher No	Teacher group	Pseudonym	Teacher's role	Age	Gender	Work year	Degree
1	L2	Gianna	ST	46–50	F	11–15	MA
2	L2	Jennifer	GT	46–50	F	Over 20	BA
3	L2	Tracy	GT	51–55	F	11–15	BA
4	L1	Aria	ST	46–50	F	0–5	other
5	L1	Ada	GT	26–30	F	0–5	BA
6	L1	Anna	GT	36–40	F	6–10	BA
7	L1	Charlotte	ST	36–40	F	11–15	BA
8	L1	Chloe	ST	31–35	F	0–5	BA
9	L1	Daisy	ST	Over 56	F	6–10	other
10	L1	Jayden	ST	26–30	M	0–5	other
11	L1	Joy	ST	36–40	F	11–15	MA
12	L1	Leah	GT	Less 25	F	0–5	BA
13	L1	Mona	GT	41–45	F	6–10	BA
14	L1	Sophia	GT	Over 56	F	Over 20	MA
15	L1	Victoria	ST	51–55	F	Over 20	other
16	L1	Zoe	ST	51–55	F	Over 20	other
17	LS	Brody	GT	26–30	M	0–5	BA
18	LS	Grace	GT	31–35	F	11–15	BA
19	LS	Hanna	ST	41–45	F	11–15	MA
20	LS	Jean	GT	41–45	F	11–15	BA

21	LS	Kaylee	GT	Less 25	F	0–5	BA
22	LS	Sean	GT	31–35	M	0–5	BA
23	LS	Yasmin	ST	Over 56	F	Over 20	BA

Given that the current study focused mainly on the teachers' verbal behaviours towards individual students with ASD, and some teachers had rated more than one student with ASD in Study Two, teacher interactions with 27 students with ASD were observed in this study. Therefore, the number of students exceeded the number of teachers in this study. The demographic details of the observed students are provided in Table 16. Again, all the names of the teachers and students are pseudonyms.

Table 16

Demographic Information and Pseudonyms for 27 Students

Student No	Age	Gender	Ethnicity	Teacher	Class level	Level of Functioning
1	10	M	Māori	Gianna	Yr6	H
2	9	M	Asian	Jennifer	Yr4	H
3	9	M	European	Tracy	Yr4	H
4	14	M	Asian	Aria	Yr8	NH
5	7	M	European	Ada	Yr3	H
6	6	M	European	Anna	Yr2	NH
7	10	M	Māori	Charlotte	Yr6	NH
8	12	F	European	Chloe	Yr7	H
9	10	M	European	Daisy	Pre-level	NH
10	13	M	European	Jayden	Yr9	NH
11	8	F	Asian	Joy	Yr3	NH
12	9	M	Asian	Leah	Yr4	H
13	10	M	European	Mona	Yr5	H
14	9	M	European	Sophia	Yr4	H
15	5	M	Pacific	Victoria	Pre-level	NH
16	15	M	Pacific	Zoe	Intermediate	NH
17	8	M	Other	Brody	Yr4	H
18	10	M	European	Grace	Yr5	H
19	5	M	European	Hanna	Yr1	NH
20	5	M	Pacific	Hanna	Yr1	H

21	7	F	European	Hanna	Yr3	NH
22	5	M	Pacific	Jean	Yr1	NH
23	9	M	Pacific	Kaylee	Yr5	NH
24	10	M	European	Sean	Yr5	H
25	13	M	Māori	Yasmin	Yr7	NH
26	14	F	Pacific	Yasmin	Yr7	NH
27	15	F	Pacific	Yasmin	Yr7	NH

Measures

The observation schedule developed by Rubie-Davies (2008) was adapted for this study. The observation schedule included five categories, which were: (a) teaching a concept, (b) learning questions and teacher responses to student answers, (c) criticism, praise, and feedback, (d) behaviour management interactions, and (e) procedural interactions. To be specific, teaching a concept or idea referred to the way in which the teacher directly taught new content to individuals, groups, or a class, by using a statement or by questioning or other ways. Questions related to learning were divided into open and closed questions. Whereas open questions offered students the opportunity to express their ideas and thinking in an open way, closed questions only had one correct answer. Teacher responses to student answers referred to how teachers responded to student answers. Criticism, praise, and feedback related to statements or comments about the behaviour of students at the individual, group, or class level. Behaviour management interactions included the teachers' preventative or reactive comments about students' behaviour, which can also be identified at the individual, group, or class level. Procedural interactions can be identified as the "classroom routines and

the management of the environment" (Rubie-Davies, 2008, p.102), which can be expressed by either questions or statements. For the main purpose of this study, the statements made by teachers regarding learning questions and teacher responses to student answers; criticism, praise, and feedback; and behaviour management, were only recorded when they directly related to the individual student with ASD.

Procedure

The observation was designed to record classroom activity and interactions by completing a running record. To ensure that all the teachers' speech could be recorded in as much detail as possible and to minimise the chance of missing important events, an audio recording was used to supplement the running record. This helped the researcher to review what had happened in the classroom when coding the information gathered.

In the latter (October and November) part of the academic year, one of the reading classes taken by each selected teacher was observed. The observation lasted for 30 minutes for each class. When observing, the researcher observed each class as a non-participant observer, which meant that the researcher sat in the back of the classroom and did not interact with anyone in the classroom (Newby, 2010). By conducting the observations in this way, the researcher was able to focus on the observation task, recording and maintaining observer objectivity. In order to make sure that the specific teacher-individual student interactions were as fully observed and recorded in the observation schedule as possible, three steps were taken: (1) Before each observation, the researcher asked the teacher to show her who

was/were the student(s) with ASD he/she rated in the survey for Study Two. (2) Teachers were asked to call the particular student's name before any interaction with him/her. (3) Occasionally, the teacher did not ask the student's name before talking to the particular student with ASD. Nevertheless, the researcher indicated that interactions were between the teacher and the individual student in her observation schedule.

After each observation, the researcher transcribed the audio recording into a Microsoft Word document. The teachers' statements were transcribed verbatim in relation to: teaching a concept, and procedure; teachers' speech towards individual students with ASD regarding learning questions and teacher responses to student answers; criticism, praise, and feedback; and behaviour management. Since 27 students with ASD were observed in the current study, the researcher generated 27 transcriptions. The audiotaping of all the observations together with the observer recordings from the observation schedule enabled a full transcription regarding the teacher-individual student interactions.

Data Analysis

Once the audio recordings were transcribed, the transcriptions were coded, using the observation schedule adapted from Rubie-Davies (2008). The five categories in the observation schedule were further divided into 21 subcategories. Specifically, teaching a concept/idea included four types of teacher statement: orientation/ focus, prior knowledge, demonstration, and explanation. Orientation/focus referred to statements that guided students to the specific context being taught. Prior knowledge was coded when teachers mentioned previous knowledge or experience related to the topic and tried to make the link between

206

previous knowledge and the current context. Demonstrations were statements that teachers

used to illustrate the specific content they wished students to learn. Explanations were those

where the teacher provided more information or details about the concept being taught.

Learning questions were divided into open questions or closed questions. Teacher

responses to student answers were further coded into the following subcategories: feedback

(teachers gave feedback to student answers); question further (teachers asked further

questions to deepen students' understanding); repeat students' answer (teachers repeated what

students had answered); repeat or rephrase question (teachers asked the same question again

or asked the question in another way); supply answer directly (teachers told students the

answer without any prompting); ask another student (teachers asked another student to

answer the question they had just asked the particular ASD student); and further explain the

question (teachers provided more information regarding the questions or student answers).

When students provided the correct answer, teachers' responses could be classified as praise

and feedback, question further, repeat students' answer, and further explanation. By contrast,

when students could not answer correctly or students did not know the answer, teachers'

responses were classified as: repeat or rephrase question, give the answer directly, or ask

another student. One subcategory emerged from the data, which was encouragement

(teachers encouraged students to make more effort to think about the question and find out

the answers). This subcategory was therefore added to the coding schedule.

Praise, criticism, and feedback related to the students' performance on the task rather than students' responses regarding questioning. Praise consisted of positive statements teachers made regarding students' performance on a task, which did not add or include learning, procedural, or management statements. Criticisms were coded when teachers gave negative statements regarding students' performance on a task. Feedback referred to teachers' comments about student learning in respect of the task.

Behaviour management included prevention comments and reactive comments. Prevention comments were statements teachers made to prevent or pre-empt students' inappropriate behaviours. These comments were further divided into positive prevention comments (teacher statements made in a positive manner) and negative prevention comments (teacher statements made in a negative manner). Reactive comments were coded when teachers reacted to students' inappropriate behaviour. It also included positive comments and negative ones. There was no subcategory in the procedural statement category. Examples of teacher statements for each subcategory are included in Table 17. Again, both teachers' names and students' names are pseudonyms.

Table 17

Examples of Teacher Statements by Category

Classification	Representative statement
Teaching a concept/ idea	
Orientation/focus	Right. We are going to look at something called past tenses.
Demonstration/modelling	Mrs Wishy-Washy likes to wash all day long. Can you see the top of the water? She is ready to wash.
Prior knowledge/experience	Today we are learning to skim and scan text for answers so can you remind me what skim and scan mean?
Explanation	Rain falls all around the world. But in some parts the rain fall is more than other parts.
Learning questions	
Open question	What do you think? What is going to happen, Lucas?
Closed question	Who is on the top? Who is Baxter?
Teachers' responses to student answers	
Praise with other comments	The baby is eating, good boy, you are listening.
Question further	Yes. So what has happened on the beach before the boys went down here, what has happened? What is the story about?
Repeat students' answer	Yes, she is sick.

Encouragement	Yes, you can. You just need to read the text more carefully.
Repeat or rephrase question	Okay. But what is the question? What are the pigs doing when the story starts?
Supply answer directly	Because she wanted the bird to catch the spider.
Further explanation	Not fruit, but fruit trees grow there [Orchid].
Ask another student	Tom, do you want to share your idea with John?
Criticism, praise, feedback	
Criticism	Group C does not sit quietly.
Praise	Good boy. Well done.
Feedback	Lane, your writing is beautiful. Good boy.
Behavioural management	
Positive prevention comments	Now it comes to choosing time. Owen, why am I thinking that you touch this book very nicely because you love it?
Negative prevention comments	Roy, look at the sand glass, you are not allowed to be talking now.
Positive reactive comments	You can come back to the table and sit down now. Other boys are sitting down.
Negative reactive comments	No, Lee, you need to sit down.
Procedural statement	Okay, we are going to read a story in two minutes. Elijah, can you sit here?

Once all the transcriptions were completed, another experienced researcher was

invited to recode the data for three of the transcriptions into the pre-determined categories to

ensure the reliability of the coding. A kappa coefficient across all categories of 0.87 was achieved, which is regarded as an acceptable level. Next, a mean score for each category, for each teacher, was calculated. Since the data did not meet homogeneity of variance assumptions by using the Levene's test, and the sample size was small, the Kruskal-Wallis test was used to compare whether there were statistically significant differences between groups for the five categories and their subcategories, followed up with post hoc analysis which was carried out using the Mann-Whitney U test. After quantitative comparison for each category, some qualitatively different kinds of behaviours by teacher expectation groups were shown. Those qualitative examples were extracts from the transcripts, which may provide insight into the differences in verbal behaviours among the three teacher groups.

In order to provide a comprehensive picture of this study, the code of each category for each teacher and the total number of codes across the five categories for each teacher was summed. Since 27 ASD students were observed, teachers' behaviours towards ASD students were coded by individual students. Hence, there were 27 cases, which are shown in Table 18. Because the number of teachers for each teacher group varied, the percentage each category of talk occurred relative to the total number of codes for each teacher group was calculated. After that, the mean percentage of each category for each teacher group was calculated (see Table 11). In addition, the percentage of individual level of procedural interactions relative to the total number of procedural interactions was calculated.

Table 18

The Number of Codes of Each Category for Each Teacher-student Interaction and the Total

Number of Codes across the Five Categories for Each Teacher

Student number	Teaching a concept	Learning questions and teacher responses	Criticism, praise and feedback	Behaviour management interactions	Procedural statements	Total
1	5	19	5	0	1	30
2	4	14	6	1	0	25
3	5	18	6	1	3	33
4	8	24	7	0	2	41
5	5	12	4	4	3	28
6	1	19	8	1	2	31
7	2	16	1	1	2	22
8	5	7	5	4	1	22
9	4	5	3	2	1	15
10	4	7	5	1	1	18
11	1	11	5	5	1	23
12	3	11	2	0	1	17
13	3	9	7	0	3	22
14	4	5	4	2	1	16
15	2	11	6	2	2	23
16	4	10	6	2	1	23
17	2	11	4	1	1	19

18	1	12	5	2	6	28
19	3	8	9	1	1	22
20	1	11	2	3	1	17
21	1	12	5	0	3	21
22	1	11	5	1	3	21
23	1	11	7	2	2	23
24	1	7	5	2	1	16
25	1	12	3	3	2	21
26	1	11	3	2	3	20
27	1	13	5	2	2	23

Results

Firstly, the results will be presented by category. After that, the results regarding the percentage of each category by total number of codes for each teacher group will be presented.

Teaching a Concept

Teacher interactions while instructing students were divided into orientation/focus, prior knowledge, demonstration, and explanation. There were no statistically significant differences for orientation/focus and explanation between the teacher expectation groups. By contrast, there were statistically significant differences between the three groups with regard

to using student prior knowledge and demonstrating a concept to students. Only the data

from those two constructs will be reported in the next section.

There was a statistically significant difference between the teacher groups in terms of

using prior knowledge or experience χ^2 (2, 27) = 16.570, $p < .001$. In order to determine

which of the groups were statistically different from one another, follow-up Mann-Whitney U

tests were employed because no post hoc option has been developed for comparing unequal

sample sizes in the Kruskal-Wallis test (Rubie-Davies, 2007). Although several statistical

tests were conducted, a Bonferroni adjustment was not made in this instance because of

findings that it is too conservative when participant numbers are small (Garamszegi, 2006).

Therefore, statistical significance was determined at $p < 0.05$, which was analogous to

Biederman and colleagues' study (Biederman et al., 2014). The post hoc analysis showed

that statistically significant differences for connecting students with prior knowledge were

found between the L2 (*Md* = 2.00, *n* = 3) and LS groups (*Md* = 0.00, *n* = 10) *U* = 000, *z* = -

3.438, $p < .05$, and between L1 (*Md* = 0.00, *n* = 14) and L2 groups *U* = 1.000, *z* = -3.141, *p*

$< .05$. In all instances, the median number of statements made by teachers related to prior

knowledge was greater for L2 group teachers than for the other groups.

Teachers from L2 group more frequently linked the current learning concept to

students' prior knowledge or experience. Generally, teacher statements related to prior

knowledge were designed to develop student thinking or deepen student understanding about

the particular concept. For example:

214

"We have learnt Blizzard, haven't we? Lucas, can you tell me what a blizzard is?

What are the differences between a storm and a blizzard?"(Tracy, L2 group)

"Today we are going to read 'Brown bear, Brown bear, what do you see?' Can you

remember when we saw a brown bear? …Yes, we saw some brown bears in the zoo this

Monday. Do the brown bears in the zoo look like the brown bear in this book?" (Gianna, L2

group)

A statistically significant difference between the L2, L1 and LS teacher groups for

demonstration was found χ^2 (2, 27) = 9.488, $p < .05$. There was a statistically significant

difference between the L1 ($Md = 1.00$, $n = 14$) and LS group ($Md = 0.00$, $n = 10$), and

between L1 and L2 group ($Md = 0.00$, $n = 3$) $U = 4.500$, $z = -2.207$, $p < .05$. Table 19

presents the median, range, and mean ranks for all subcategories and suggests that L1 group

teachers used the strategy of demonstration more frequently than did the other groups. When

demonstrating, teachers often showed their students pictures or photos related to the

particular concept or idea, which assisted and helped student understanding. For example,

"Look, the book we are reading today is 'Me and my dog'. You can tell me what the

story is about? What can you see from the cover? [Students answered] Yes, it is about a girl

and her dog, Baxter." (Zoe, L1 group)

Table 19

Medians, Ranges, and Kruskal-Wallis Mean Ranks for Teaching Statements by Teacher Group

	L2 group (*n* = 3)			L1 group (*n* = 14)			LS group (*n* = 10)		
	Median	Range	Mean rank	Median	Range	Mean rank	Median	Range	Mean rank
Teaching statements									
Orientation	1.00	0	14.00	1.00	3	16. 52	1.00	1	10.85
Prior knowledge	2.00	2	24.17	.00	2	14.57	.00	1	10.15
Demonstration	2.00	1	20.83	1.00	5	15.96	.00	1	9.20
Explanation	.00	0	12.50	.00	1	15.39	.00	0	12.50

Learning Questions and Teacher Responses to Student Answers

A Kruskal-Wallis test was used to examine any differences between the teacher

groups for open and closed questions that teachers asked individual students with ASD.

Table 20 suggests there were no statistically significant differences for both types of

questions. However, the Kruskal-Wallis tests showed that teachers from the L2 group were

more likely to ask open questions than teachers from the LS group since the median and

mean rank for the L2 group was higher than for the LS group.

Table 20

Medians, Ranges, and Kruskal-Wallis Mean Ranks for the Types of Questions by Teacher

Group

Question types	L2 group (n = 3)			L1 group (n =14)			LS group (n =10)		
	Median	Range	Mean rank	Median	Range	Mean rank	Median	Range	Mean rank
Open questions	3.00	3	20.00	2.00	6	14.86	1.00	4	11.00
Closed questions	1.00	3	5.67	4.00	9	14.79	4.50	5	15.40

Teacher responses to students' answers varied. When students made correct

responses, one of the common responses for teachers was giving student feedback, which will

be presented in the next section. Another common response for teachers was to question

students further. When questioning students further was analysed, there was a statistically

significant difference between the teacher groups χ^2 (2, 27) = 6.815, $p < .05$. A post hoc

analysis showed that the differences were between the L2 (Md = 3.00, n = 3) and LS group

($Md = 1.00$, $n = 10$) $U = 0.000$, $z = -2.631$, $p < .05$, and L2 and L1 group ($Md = 1.00$, $n = 14$)

$U = 4.000$, $z = -2.206$, $p < .05$. As can be seen from Table 21, which includes the median,

range, and Kruskal-Wallis mean ranks of all subcategories related to teacher responses

(except feedback), it seemed that the strategy of questioning students further was a more

common practice for L2 group teachers than for the teachers in the other two groups.

Table 21

Medians, Ranges, and Kruskal-Wallis Mean Ranks for Teacher Responses following Student Answers to Questions

Teacher responses	L2 group (*n* = 3)			L1 group (*n* = 14)			LS group (*n* =10)		
	Median	Range	Mean rank	Median	Range	Mean rank	Median	Range	Mean rank
Teacher responses to correct answers									
Praise with further comments	3.00	3	15.50	3.00	6	16.46	1.00	2	10.10
Question further	3.00	1	24.67	1.00	5	13.18	1.00	2	11.95
Repeat student answer	0.00	2	9.00	1.00	2	10.71	2.50	2	20.10
Teachers responses to incorrect answers									
Encouragement	2.00	3	21.17	0.00	2	14.61	.00	0	11.00
Teacher rephrasing questions	3.00	3	26.00	0.00	2	11.82	0.00	1	13.45

219

Supplying answer directly	0.00	0	9.00	0.00	1	9.79	1.50	2	21.40
Explanation	3.00	1	23.17	1.00	4	15.25	0.00	1	9.50
Ask other student	0.00	0	10.00	0.00	2	14.93	0.00	1	13.90

It was also interesting to note that L2 group teachers tended to question students further by asking more open questions, while L1 and LS group teachers were inclined to ask more closed or factual questions. The examples of using different types of questions to question students further are shown below:

"Eason, what is the colour of the duck? [After student answer] Yes, it is a yellow duck. Good boy. Do you know something else which is yellow? Have you seen some ducks with other colours?" (Gianna, L2)

"What is the first character, Steven? [After student answer] What is the next character?" (Brody, LS)

Teachers also liked to repeat the student answer when the answer was correct. A Kruskal-Wallis test revealed that there were statistically significant differences between the teacher groups χ^2 (2, 27) = 10.260, $p < .05$. Those differences were between the L2 group (*Md* = 0.00, *n* = 3) and LS group (*Md* = 2.50, *n* = 10) U = 3.500, z = -2.035, $p < .05$, and between L1 group (*Md* = 1.00, *n* = 14) and LS group U = 20.500, z = -3.004, $p < .05$. LS group teachers repeated student answers more frequently than L1 and L2 group teachers.

Where the students gave incorrect answers or the students did not know the answer, one common practice for teachers was to rephrase or repeat the question. There were statistically significant differences between the teacher groups χ^2 (2, 27) = 12.271, $p < .001$. Further post hoc analyses revealed that the differences were between the L2 group (*Md* =

3.00, $n = 3$) and LS group ($Md = 0.00$, $n = 10$) $U = 0.000$, $z = -2.779$, $p < .05$, and between the

L1 group ($Md = 0.00$, $n = 14$) and L2 group $U = 0.000$, $z = -3.286$, $p < .05$. This strategy

appeared to be one that was more commonly used among the L2 group teachers rather than

among the L1 and LS group.

The L2 teachers tended to have a preference for rephrasing the questions while L1 and

LS group teachers preferred to repeat questions. L1 and LS group teachers often simply

repeated the question. In contrast, L2 group teachers often rephrased questions or provided

additional information to help their students think about the questions. Examples of

rephrasing questions, providing additional information, and repeating questions are provided

below.

"What are the industries there? [The student said "I do not know".] What are the

people doing for their living?" (Aria, L1 group)

"So who is the king of the mountain? [No reply] Who is that?" (Charlotte, L1 group)

"What did he say to Johansson? [No reply] What did Richard say?" (Hanna, LS

group)

Some teachers used explanation as another strategy. Again there was a statistically

significant difference between the three groups for explanation χ^2 (2, 27) = 8.912, $p < .05$.

Those differences were between the L2 group ($Md = 3.00$, $n = 3$) and LS group ($Md = 0.00$, n

$= 10$) $U = 0.000$, $z = -2.901$, $p < .05$, and between the L1 group ($Md = 1.00$, $n = 14$) and LS

group $U = 40.000$, $z = -1.981$, $p < .05$. The median number of explanations used by L2 and L1 group teachers was greater than that of LS group teachers.

Teachers provided explanations to either help students understand the particular teaching question clearly, or deepen students' understanding about the particular answer. For example, when a teacher asked her student a question and the student did not know the meaning of 'depot' in the question, the teacher stated:

"Let's work it out. Look at me. It is a place where people put their trucks. It is a funny word. When you see your dad, it will be on Sunday. Ask him 'Is your truck in a depot?' So depot is like a storage place or it's like a garage just for trucks." (Sophia, L1)

When answers were incorrect or when answers were unknown, the teachers at times encouraged students to read more carefully or think further. When such encouragement was analysed there was a statistically significant difference between the teacher groups χ^2 (2, 27) $= 7.487$, $p < .05$. A post hoc test showed the difference was between the L2 ($Md = 2.00$, $n = 3$) and LS group ($Md = 0.00$, $n = 10$) $U = 5.000$, $z = 2.687$, $p < .05$. This was a more common practice for the L2 group than it was for the LS group.

The encouragement teachers gave varied. Some of the encouragement was filled with additional information whereas others were stated simply. Those two types of encouragement are shown below:

"John, focus. I know you can do it." (Jennifer, L2)

"Yes, you can. You need to find it in the text, in the second paragraph. [Several seconds later, Lucas said he could not find the answer]. Yes, you can, Lucas. You just need to read it quietly." (Tracy, L2)

Another strategy used by teachers was to directly provide students with the answer. A Kruskal-Wallis test showed that there was a statistically significant difference between the teacher groups χ^2 (2, 27) = 18.721, $p < .001$. Those differences were between the L2 ($Md = 0.00$, $n = 3$) and LS group ($Md = 1.50$, $n = 10$) $U = 1.500$, $z = -2.419$, $p < .05$, and between L1 ($Md = 0.00$, $n = 14$) and LS group $U = 9.500$, $z = -3.999$, $p < .001$. The median number revealed that this occurred more commonly for the LS group teachers than for any other groups.

Criticism, Praise, and Feedback

When feedback was analysed, using a Kruskal-Wallis test, there was a statistically significant difference between the teacher groups χ^2 (2, 27) = 8.647, $p < .05$. The post hoc Manny-Whitney U tests showed that the differences were between the L2 ($Md = 5.00$, $n = 3$) and LS group ($Md = 2.00$, $n = 10$) $U = 3.500$, $z = -1.974$, $p < .05$, and the L1 ($Md = 5.00$, $n = 14$) and LS group $U = 26.500$, $z = -2.587$, $p < .05$. Providing students with feedback was a more common practice for the L2 and L1 group teachers than it was for the LS group teachers.

Teachers from the three groups appeared to have different emphases regarding the feedback they provided to students. Specifically, the L1 and L2 group teachers tended to

provide their students with feedback in relation to their learning, while the LS group teachers appeared to provide more feedback about students' on-task performance. The examples below may illustrate those differences.

[When the individual student answered the question correctly] "Yes. Because this was the first time Emily went to New York, everything looks so amazing for her. I really like the way you are listening and thinking, Alex. Let's move to the next paragraph." (Leah, L1)

"I think you skipped a few pages, James. Can you turn to page 37 and work on the first question? [Several minutes later] Good, you are working." (Kaylee, LS)

Sometimes, teachers praised students regarding their performance in learning or for being on task. The analyses showed that there was a statistically significant difference between the teacher groups for praise χ^2 (2, 27) = 8.986, $p < .05$. The difference was between the L1 ($Md = 0.50$, $n = 14$) and LS group ($Md = 2.00$, $n = 10$) $U = 24.500$, $z = -2.800$, $p < .05$. When students performed well on their tasks, the LS group teachers gave them more praise than did the L1 group teachers.

This study did not run a statistical comparison in relation to criticism because teachers from the L2 group and L1 group did not criticise students at all. This means that teachers from only the LS group criticised their students. It was worth noting that the number of criticisms the LS group teachers used was very small.

Table 22

Medians, Ranges, and Kruskal-Wallis Mean Ranks for Praise and Feedback by Teacher

Group

Teacher responses	L2 group (*n* = 3)			L1 group (*n* = 14)			LS group (*n* = 10)		
	Median	Range	Mean rank	Median	Range	Mean rank	Median	Range	Mean rank
Praise	0.00	1	9.33	.50	1	11.00	2.00	3	19.60
Feedback	5.00	1	20.67	5.00	4	16.50	2.00	6	8.50

Behaviour Management Interactions

There was a statistically significant difference between the teacher groups for negative reactive comments teachers made χ^2 (2, 27) = 11.249, $p < .05$. The post hoc analyses revealed that the differences were between the L1 (*Md* = 0.00, *n* = 14) and LS group (*Md* = 1.00, *n* = 10) *U* = 21.000, *z* = -3.257, *p* < .05. An examination of the medians showed that this occurred more frequently for the LS group teachers than for the L1 group teachers (see Table 23). There were no statistically significant differences between the teacher groups with regard to positive/negative preventive statements and positive reactive comments. This may be because the number of statements made by teachers which were preventive comments (including positive and negative comments) and positive reactive comments was very small.

Table 23

Medians, Ranges, and Kruskal-Wallis Mean Ranks for Teacher Management Statements by Teacher Group

	L2 group (*n* = 3)			L1 group (*n* =14)			LS group (*n* =10)		
	Median	Range	Mean rank	Median	Range	Mean rank	Median	Range	Mean rank
Positive preventive comments	0.00	0	11.50	0.00	2	16.32	0.00	0	11.50
Negative preventive comments	0.00	0	13.00	0.00	0	13.00	0.00	1	15.70
Positive reactive comments	0.00	0	5.00	1.00	4	15.82	1.00	2	14.15
Negative reactive comments	1.00	1	16.00	0.00	1	9.71	1.00	2	19.50

One interesting finding was that L2 and L1 teachers did not use negative preventive comments and LS group teachers did not use positive preventive comments at all. A further examination of the median, range, and mean rank for those subcategories displayed in Table 8 showed that, at the median level, managing student behaviour in a positive way (including positive preventive management and positive reactive management) was a more common practice for the L1 group teachers whereas managing student behaviour problems in a negative way was a more common practice for the LS group teachers. It is recognised that these differences were not statistically significant, however.

Procedural Statements

The medians, ranges, and mean rank for each group showed that making procedural statements to students appeared to be a more common practice for the LS group than for the other two groups (see Table 24). Secondly, it appeared that teachers from the LS group were more likely to make procedural statements towards individual students with ASD since the proportion of procedural interactions at the individual level for L2, L1 and LS groups was 50%, 55% and 71%, respectively. A Kruskal-Wallis test was used to analyse any statistically significant differences between the teacher groups regarding procedural statements. The results showed that there were no statistically significant differences between the three groups.

Table 24

Medians, Ranges, and Kruskal-Wallis Mean Ranks for Procedural Statements by Teacher

Group

Teacher responses	L2 group (*n* = 3)			L1 group (*n* = 14)			LS group (*n* = 10)		
	Median	Range	Mean rank	Median	Range	Mean rank	Median	Range	Mean rank
Procedural comments	1.00	3	10.83	1.00	2	12.25	2.00	5	17.40

Overall, teachers from the three teacher groups seemed to interact with ASD students differently. It appeared that teachers from the L2 group made links to prior knowledge more frequently than did teachers from the L1 and LS groups. Similarly, L2 teachers were more likely than the other two groups to question students further when students gave correct answers, and to rephrase questions when answers were incorrect or answers were unknown. In addition, L2 group teachers gave more encouragement to students than did LS group teachers when students gave incorrect responses to questions. With regard to demonstration while instructing, this was a more common strategy for the L1 group teachers than for the L2 and LS group teachers.

For some subcategories, teachers from the L1 and L2 group behaved very differently from teachers from the LS group. They appeared to provide feedback and further explain the particular question to students more frequently than did the LS group teachers. Compared with L1 and L2 group teachers, LS group teachers tended to repeat student answers more

frequently when students answered correctly. They were more likely than the other two

groups of teachers to supply an answer to students directly when answers were incorrect.

They also seemed to make more negative reactive comments to manage students'

misbehaviour. In addition, LS group teachers praised students more frequently than L1 group

teachers.

As mentioned before, the mean percentage of each category for each teacher group

was calculated. Table 25 below shows that teachers from different groups seemed to expend

different effort in each category. It can be seen that the majority of teacher talk was related to

learning questions and teacher responses to student answers, and criticism, praise, and

feedback across the teacher groups. In addition, the proportion of those two categories

relative to the total number of interactions for each teacher group was similar. However, the

actual talk seemed very different among the teacher groups regarding the proportion of talk

related to teaching a concept, behaviour management, and procedural interactions. For

example, while nearly 15% of the interactions were related to teaching a concept for the L1

and L2 group teachers, this only accounted for 5% of interactions for the LS group teachers.

In addition, the proportion of behaviour management used by the LS group was 10 times

greater than that used by the L2 group teachers.

Table 25

Mean Percentage of Each Category by Teacher Group

Teacher group	Teaching a concept	Learning questions and teachers' responses to student answers	Criticism, praise, and feedback	Behaviour management	Procedural
L2	15	53	27	1	4
L1	14	41	32	7	6
LS	5	49	25	11	10

Discussion

The current study aimed to explore whether there were quantitative and qualitative differences between the teacher groups with regard to teachers' verbal behaviours towards students with ASD. The results revealed that teachers from different teacher groups appeared to have differing emphases when talking to students with ASD. Consequently, they worked with their students very differently. Of the 21 subcategories, 11 showed statistically significant differences between the three groups. Teachers talk regarding some subcategories also showed qualitative differences. In addition, results indicated that the differences not only related to the instructional environment within the classroom, but also to the socioemotional environment. Those differences may create a very different learning environment for students of teachers who came from different expectation groups, and may influence how the students learn.

Between-group Differences for Teaching A Concept

With regard to teaching a concept, teachers' statements related to prior knowledge and demonstration differed significantly from one group to another. The number of interactions regarding prior knowledge that teachers in the L2 group used was much greater than the number of interactions of the other two groups, while the number of interactions regarding demonstration that teachers in the L1 group used was greater than the number of interactions of the L2 and LS groups. Although teachers from L2 and L1 groups tended to have their own preferred teaching strategies, both strategies of connecting students to prior knowledge and demonstration were effective instructional techniques. Linking prior knowledge to the current content may not only help students remember what they have learnt, but also help them to understand the content as an integrated whole (Muijs & Reynolds, 2010). On the other hand, demonstration was regarded as a very useful strategy that was more effective than using verbal explanation, especially for younger students or students who benefit from visually supportive learning (Muijs & Reynolds, 2010).

In addition, it is evident that the L1 and L2 group teachers made more teaching statements than did LS group teachers. This was consistent with findings related to effective teaching, which have shown that effective teachers expended much more effort on direct instruction than less effective teachers (Bohn, Roehrig, & Pressley, 2004; Connor, Morrison, & Petrella, 2004). It was also analogous with Rubie-Davies' study (2007). In her study, Rubie-Davies (2007) found that teachers who had uniformly high expectations for their students made more teaching statements and provided scaffolding to students for their

232

learning, in comparison to the teachers who had uniformly low expectations for their students

(Rubie-Davies, 2007). The students of teachers who made far more teaching statements (the

L1 and L2 group teachers), were more likely to be aware of student learning progress and

were more easily able to help students understand the new concepts compared with students

of teachers who made fewer teaching statements (the LS group teachers). Furthermore, since

students seemed to receive more support from their L2 teachers, their learning outcomes

would likely be greater than their counterparts of LS group teachers.

With regard to the mean percentage of teaching a concept related to the total number

of codes for each teacher group, it was evident that L2 and L1 group teachers expended three

times as much effort as LS group teachers. This may imply that the L2 and L1 group teachers

allocated much more time to academic learning than their LS counterparts. Generally,

effective teachers have been found to spend more time focusing on academics (Burchinal et

al., 2008) and providing a high level of instruction (Connor et al., 2004), which is further

related to student achievement in reading (Taylor, Peterson, Pearson, & Rodriguez, 2002).

Teachers across the teacher groups in this study made the largest proportion of

interactions through asking questions and responding to students' answers, which was in line

with findings from existing literature related to effective teaching (Muijs & Reynolds, 2010;

Rubie-Davies et al., 2010). As expected, all the teachers in this study asked their students

both open and closed questions. This was not the case for Smith and colleagues' study where

they found that there were no open questions asked for nearly one-third of the English

classrooms observed (Smith, Hardman, Wall, & Mroz, 2004).

Between-group Differences for Learning Questions and Teacher Responses to Students'

Answers

Although there were no statistically significant differences between the three groups

for both types of questioning, it is worth noting that the proportion of closed questions

teachers asked in relation to the total number of questions exceeded that of open questions.

This means that, overall, teachers asked more closed questions than open questions, which

was analogous with previous studies regarding the types of questions teachers used in their

classroom (Muijs & Reynolds, 2010; Rubie-Davies et al., 2010). In addition, teachers from

L2 group appeared to ask more open questions than did teachers from LS group. When

investigating the differences in questioning between teacher groups (high, average, and low

expectation teachers), Rubie-Davies (2007) found that high expectation teachers asked more

open questions than low expectation and average progress teachers. This may be why,

compared to LS group teachers, L2 group teachers were also more likely to develop students'

thinking skills. Although whether to use open or closed questions mainly depended on

teaching content and students' severity of autism, teachers across the three groups are all

encouraged to ask students open questions whenever possible to develop students' deeper

level of thinking (Rubie-Davies, 2007).

Teachers' responses to student answers varied among the three teacher groups, no

matter which type of questions the teacher asked. When students answered correctly, L2

234

group teachers were more likely than L1 and LS group teachers to question students further, which may help their students form a deeper understanding about the specific question. Those teachers were also more likely to rephrase or repeat questions when students were unable to answer correctly. Considering that helping and promoting students' understanding of a concept by continuously questioning was found to be one of the characteristics of effective teachers (Topping & Ferguson, 2005), the questions asked by L2 group teachers were desirable to support student learning. Similarly, when the answer was incorrect, L2 group teachers more frequently encouraged their students to think about the question more carefully than did L1 and LS group teachers. This was also consistent with findings related to effective teaching (Bohn et al., 2004).

In addition, further explanations following student answers were provided more frequently by L2 and L1 group teachers than by LS group teachers. This may generate different learning opportunities for students from different teacher groups. It seemed that studying with L1 and especially L2 group teachers, students were provided with more support and more information for their learning, therefore their understanding about the particular question would be more comprehensive than that of their counterparts with LS group teachers (Rubie-Davies, 2008). In contrast, students of LS group teachers may be more likely to learn at a superficial level because of the types of questions asked and because they were not provided with the opportunity to learn comprehensively because of limited support or information about the particular question.

Unlike the L2 and L1 group, teachers from the LS group more frequently repeated students' answers when the answer was correct and supplied answers to students directly when the answer was incorrect. This may imply that students of the LS group teachers knew only the answers but had fewer opportunities to apply the answer to different contexts or understand the answers more deeply than their peers from the other groups. Therefore, they had limited opportunity to develop their higher-order thinking skills. Since developing students' higher-order thinking has been shown to be a characteristic of effective teaching (McLaughlin & Talbert, 1993), and every student would benefit from higher-order thinking (Wenglinsky, 2002), it was disadvantageous for students that LS group teachers seldom provided those opportunities to their students.

The differences between the three groups regarding teacher responses to student answers may also demonstrate that teachers from each group created a different socioemotional climate in their classroom. When students answered correctly, the L1 and especially L2 group teachers were more likely than their LS counterparts to further enhance student learning. They were more likely to help students in solving questions using supportive strategies when they answered incorrectly. In contrast, LS group teachers seemed to be less patient than their L1 and L2 group counterparts when students provided incorrect answers. It appeared that L1 and L2 group teachers created a warmer and more supportive climate in the classroom while LS group teachers tended to create a less warm and supportive climate. Previous research has found that the quality of the socioemotional climate in the classroom was positively related to the quality of the teacher-student relationships (Davis,

2006), and further related to students' achievement (Rimm-Kaufman & Chiu, 2007). This may imply that the students of teachers in the L2 and L1 group may achieve at a higher level than their peers of teachers in the LS group.

Between-group Differences for Criticism, Praise, and Feedback

With regard to praise, it was evident that teachers from the LS group more frequently praised students about their performance on tasks than the L1 group teachers. Praise was general (e.g., good boy), which may provide a picture that students with LS group teachers were often given praise regarding their performance, but may not have been clear what they were being praised for. Consequently, those students who received general praise from their teachers did not have much chance to attribute their desirable learning performance to their effort, and over time, they may not have experienced a sense of achievement (Maclellan, 2005) when their teachers praised them. By contrast, a previous study has shown that praise for effort connected to learning can help students focus on the possibilities for learning and improvement that hard work may offer, which can benefit student learning (Mueller & Dweck, 1998). Giving students specific praise relating to their learning is a common practice for effective teachers and is recommended by researchers (Bohn et al., 2004).

An interesting finding of the current study was that only teachers from the LS group provided their students with criticism, but the number of criticisms used was few. This was analogous with the previous research which has shown that high expectation teachers much less frequently criticised students than low expectation teachers (Rubie-Davies, 2007). In

addition, the low levels of criticism that teachers used in this study may imply that the strategy of criticism was not treated as an effective way to teach students with ASD by most of the teachers. Since teachers from the L1 and L2 group did not criticise their students at all, the socioemotional climate in those classrooms was more likely to be positive than that in the classroom of LS group teachers where students did, at times, experience some level of criticism.

Feedback was provided to students with varying frequency across the different teacher groups. Whereas provision of feedback was common practice among the L1 and L2 group teachers, it was an uncommon practice for the LS group teachers. As feedback has been regarded as the most significant teacher-located instructional practice to promote student learning (Hattie, 2005; Hattie & Timperley, 2007; Topping & Ferguson, 2005), insufficient use of feedback by LS group teachers was undesirable. The learning of students of LS group teachers may be hindered to some extent because those students did not know what they had achieved and what they could do further. By contrast, students of L2 and L1 group teachers were more likely than their peers of LS group teachers to receive information about their learning progress. Therefore, they were more likely to set a specific goal for their future learning and were more likely to be motivated and monitored to achieve the next goal, which may benefit their learning (Rubie-Davies, 2007).

Between-group Differences for Behaviour Management Interactions

Teachers from the L2 group were less likely than their L1 and LS group counterparts to manage their students' behaviour by using both preventive and reactive behaviour

238

management strategies. This may be partly due to the findings that students in the L2 group appeared to have comparatively fewer behavioural problems. This finding may be partly because the L2 group teachers had established effective classroom management (Muijs & Reynolds, 2010) and they did not need to manage students frequently.

In addition, the L1 group teachers seemed to manage their students' behaviour in a positive way (including positive preventive comments and positive reactive comments). Compared to teachers from the L1 group, teachers from the LS group appeared to manage their students in a more negative way. It has been found that effective teachers prefer to use more positive strategies rather than negative to manage their students' behaviour (Hall & Harding, 2003). Therefore, L1 group teachers using positive techniques to manage student behaviour was desirable. In addition, since teachers from the different groups tended to use different behaviour management techniques, the socioemotional climate created by those teachers may also have been different. The L2 group teachers may create an autonomy-supportive classroom climate because they seldom managed students. The L1 group teachers were more likely to create a more positive and supportive classroom climate than their counterparts, the LS group teachers.

Between-group Differences for Procedural Statements

As expected, there were no statistically significant differences between the three groups for procedural statements, which may reflect that teachers across the three groups treated procedural interactions as an effective way of managing learning. Providing

procedural statements to those students would help them decrease the likelihood of misbehaviour and help them learn effectively. It may imply that teachers in the current study were aware of the particular learning characteristics of students with ASD and they had established some routines that benefitted the students.

In addition, although there were no statistically significant differences between the three groups with regard to the number of procedural interactions teachers used, it appeared at the median level that the LS group teachers used more procedural interactions with their students than L1 and L2 group teachers, at both the class and individual level. This was analogous with previous literature in which low expectation teachers made many more procedural statements than high expectation and average progress teachers (Rubie-Davies, 2007). Those differences also refer to differences between effective and less effective teachers. Generally, effective teachers spend less classroom time in procedural interactions than less effective ones (Good & Brophy, 1986). Since teachers from the L1 and L2 groups appeared to make fewer procedural statements to their individual students with ASD than LS group teachers, it may also imply that those teachers may have established clear routines for students early in the academic year. Their students had therefore developed the skill of self-management (Lee, Simpson, & Shogren, 2007) and could enact the routines well, and did not need too many reminders (Bohn et al., 2004; Topping & Ferguson, 2005).

An interesting finding was that, at the individual level, procedural interactions took less than 8% of total teacher-student interactions by the teacher groups. This means that teachers in the current study expended a limited effort on this aspect of their interactions with

240

students. This was inconsistent with the study conducted by Cameron, Cook, and Tankersley (2012). They investigated one-to-one interactions between educators (including general education teachers, special education teachers and paraprofessionals) and students (including students with mild disabilities, severe disabilities and without disabilities) in co-teaching, inclusive classrooms. They found that most of the one-to-one interactions were associated with non-instructional or procedural interactions, which meant that most of the one-to-one interactions were aimed at keeping the students on-task (Cameron, Cook, & Tankersley, 2012). However, the current study showed a comparatively desirable picture in which most of the one-to-one interactions between teachers and students with ASD were related to the academic domain.

The Possible Different Learning Outcomes for Students of L2, L1 or LS Group Teachers

The current study revealed that there were several important differences between the LS group and the L1 and L2 groups in terms of their instructional practice. L1 group teachers behaved more similarly to L2 group teachers, even though there was some degree of difference. Therefore, this study seemed to show that the instructional practices would be very different between teachers who expected their students to make some degree of increase in reading in one year and teachers who expected their students to stay at the same level of reading in one year. Further, as discussed earlier, the different instructional practices, especially the ways of responding to students' answers, the use of criticism, and the types of

classroom management, could also generate different socioemotional climates in different classrooms. Generally, a warmer and more supportive classroom environment appeared to be created by the L2 and L1 group teachers than that created by the LS group teachers. Those instructional and socioemotional climate differences by teacher groups could lead to very different learning experiences for students who studied with the L1 and L2 group teachers, compared with LS group teachers. Students of the L1 and L2 group teachers appeared to be often provided with a clear structure of their learning content, and were often provided with more learning opportunities through more open questions, and being further questioned more frequently, which would help them understand particular content more deeply. In addition, it appeared that they were more often exposed to a warmer and positive socioemotional climate since their teachers interacted with them in a positive and supportive, rather than negative, way. As a result, those students may have gained greater achievement. By contrast, those students of the LS group teachers appeared to be provided with a less clear framework for their learning, and with limited opportunities to think about a particular question more deeply. They were more likely to be praised by their teachers without specific context so they seldom had the chance to connect the praise to their efforts. Moreover, they were more likely to be exposed to a negative and a less enjoyable classroom climate. Studying in such a classroom may make it much more difficult for them to gain greater achievement gains in comparison to their peers of L2 and L1 group teachers.

Since three out of five categories in this study were mainly observed at the individual level, this study revealed a wide range of teacher and individual student interactions, which

242

exceeded the observed number of teacher and student interactions at the class and group

level. Although the total number of teacher and student interactions at the class and group

level was not differentiated, and the proportion of teacher-individual student interactions

related to the total classroom interaction was not measured, it is clear that teachers did spend

some time and expend some degree of effort to talk with individual students with ASD. This

means that teachers across the three groups paid some attention to individual students with

ASD. Considering high levels of teacher attention towards students with special needs has

been treated as an imperative component of effective special education practice (Gersten,

Schiller, & Vaughn, 2000), this study seemed to show that both general education teachers

and special education teachers in this study attempted to interact with their students with ASD

effectively.

The current study revealed that teachers who expected their students to make some

degree of increase in reading in one year appeared to behave differently compared with their

counterparts who expected their students to stay at the same level in reading in the same time

period. Those differences could create a very different instructional and socioemotional

climate for students with ASD. This may confirm that there was a relationship between

teacher expectations and teacher behaviours (Rubie-Davies, 2008). Although this study did

not examine whether student achievement would be different when studying in different

instructional and socioemotional environments, previous studies have shown that teachers'

differential behaviour related to their expectations could play a role in influencing student

achievement (Baker, 1999; De Jong & Westerhof, 2001). There is no reason to suspect the relationship between teacher differential behaviour and the achievement of students with ASD would not exist, although it is acknowledged that achievement outcomes were not measured in this study. Nevertheless, the findings further emphasised the importance of expecting students to make improvements in reading. High expectations lead to greater levels of academic achievement (Rubie-Davies, 2014).

Summary

The main purpose of this study was to examine teachers' verbal behaviours towards students with ASD based on teacher expectations. The results of this study showed that the verbal behaviour of L1 and L2 group teachers differed from that of LS group teachers, which supported the argument that teacher expectations may be transmitted to students through teachers' verbal behaviour (Brophy & Good, 1970; Brophy, 1985; Rubie-Davies, 2007), even students with ASD. In addition, there were not only statistically significant differences between the three groups, but also qualitative differences in terms of teachers' verbal behaviour. Those differences may further influence ASD students' learning.

The next chapter will focus on the findings of the four studies that comprised the current research. The research questions and main findings of each study will be reviewed first. Then the findings across the four studies will be integrated and discussed. This concluding chapter will finish with limitations of the current research, relevant implications for educational practice, and proposed future research directions.

Chapter Seven

Discussion

The current thesis has examined teacher expectations for children with autism spectrum disorder (ASD) and factors that are relevant to teacher expectations, including teachers' autism-specific knowledge, teachers' beliefs about teaching children with ASD, and teachers' interactions with students for whom they hold specific expectations. The participants comprised special education teachers and general education teachers in both special schools and mainstream schools in a large urban area of New Zealand. Firstly, their specific knowledge about autism was examined. Then, the reading and social expectations teachers held for their particular students were investigated for 27 teachers working with students with ASD. Based on the number of levels teachers predicted their individual students would gain in reading, teachers were further grouped as L2, L1 and LS teacher groups, with L2 indicating that teachers believed that their students with ASD would improve two levels, L1 one level, and LS that there would be no improvement and that students would remain at the same level. The beliefs teachers held with regard to children with ASD, autism teaching, and teacher self-efficacy in teaching children with ASD were compared and explored among the three groups, as well as teachers' differential interactions with students with ASD.

The first section of this chapter will briefly summarise the main findings of each study. The second section will focus on teachers' academic and social expectations for

individual students with ASD. After that, the discussion of the findings of the current research related to the relations between teacher expectations and teacher knowledge will be discussed. The fourth section will predominantly provide a discussion of the findings related to teacher expectations, teacher beliefs, and teacher interactions. Then, the contribution to knowledge of this thesis will be discussed. The final section will focus on the implications of this study and point out its limitations and potential future studies.

The Research Propositions

The first proposition of this study was that teachers would have both accurate knowledge and some misconceptions with regard to autism, and teachers' autism-specific knowledge would relate to teachers' demographic characteristics. This was confirmed by the results. Both special education teachers and general education teachers possessed some accurate knowledge about autism, which was mainly related to the general intervention and treatment of autism. However, they also harboured some misunderstandings, especially in terms of the diagnosis and etiological knowledge regarding autism. In addition, teachers' autism-specific knowledge varied according to their role as general or special education teachers, their teaching experience and their gender.

The second proposition of this study was that teachers would hold different expectations for their individual ASD students with regard to their academic achievement and social development, and that some teachers may have higher expectations for their ASD students than others. This proposition was partly confirmed by the results. A diversity of teachers' reports and expectations for students' reading achievement and social development

246

were found. With regard to teachers' social expectations, the majority of students were predicted to make some degree of improvement in one year. Meanwhile, although it was unknown whether expectations of some teachers were higher than those of other teachers, one trend emerged among the various reading expectations. Some teachers expected their students to make two levels of increase in one year; some teachers expected their students to make one level of increase; whereas others expected their students to maintain the same level, in the same time period. Teachers with more than one ASD student consistently predicted the same gains for all their ASD students. Furthermore, it appeared that the predictions of levels of increase made by the L1 and LS group teachers (24 of 27 teachers) did not appear to relate to students' severity (students diagnosed as high or low functioning autism). Instead, it seemed that the teachers' expectations were probably related to individual teacher beliefs about the capability of students with ASD. Therefore, based on the number of levels teachers predicted their students would gain in reading, the teachers were grouped into three groups, namely, L2, L1, and LS groups.

The third proposition was that teachers with different levels of reading expectations would differ in terms of their beliefs about children with ASD and how learning should be delivered to students with ASD. Their self-efficacy in teaching children with ASD was also proposed to differ. The results of the current thesis appeared to partly confirm the proposition. For one thing, teachers from the L1 and L2 group were more likely than their counterparts from the LS group to hold more favourable beliefs about students with ASD, and

they were more likely to change students with ASD into different groups when they noticed

improvements or when they believed that students' needs could be catered for well in a

different group. With regard to teacher efficacy in teaching children with ASD, it appeared

that the majority of the teachers in the current thesis had high levels of self-efficacy; however,

a large proportion of high-efficacy teachers were from the L2 and L1 group teachers. This

can be interpreted as that the L1 and L2 group teachers appeared to hold more favourable

beliefs about their own ability in promoting the development of students with ASD, in

comparison with the LS group teachers.

However, teachers' beliefs about planning learning opportunities for students with

ASD and assessing their success were more related to their role (working as a special

education teacher or general education teacher) rather than their reading expectations.

Furthermore, teachers across the three teacher groups shared similar views regarding their

role in promoting the development of ASD students by providing the visual support and

social activities to ASD students that were necessary to contribute to the students' social and

academic gains.

The final proposition of this study was that the instructional behaviours of teachers

from different expectation groups would differ. Again, this proposition was confirmed.

Teachers from the L1 and L2 groups talked and interacted with individual students with ASD

more similarly, and the types of interactions were different from those of LS group teachers.

In addition, the results seemed to reveal that teachers from different expectation groups not

only behaved differently in their instructional practice, but also in the socioemotional climate they created for students with ASD.

Teachers' Reading and Social Expectations for Individual Students with ASD

The current thesis explored teachers' expectations for students with ASD by using teachers' predictions as a proxy for teacher expectations. The research findings appeared to support this approach. Firstly, it was interesting to note that four teachers in the current thesis judged and predicted more than one student with ASD regarding their reading achievement and social development, and their expectations for those students were similar. Those four teachers were all later grouped into the LS group since they expected all their individual students to stay at the same level in reading throughout one year. Previous studies have shown that, generally, teachers hold normative expectations for all their students, and teachers' class-level expectations have a greater influence on student learning than expectations for individual students (Brophy, 1983; Rubie-Davies, 2008). Although it may be too hasty to state that the teachers in this thesis held normative expectations for their ASD students, it may lend some weight to treating teachers' predictions as an indicator of teacher expectations.

In addition, previous studies have shown that teacher expectations can be measured in different ways. Normally, most studies have explored teacher expectations by including students' actual achievement (e.g., Alvidrez & Weinstein, 1999; Good & Brophy, 2008; Rubie-Davies, 2008). However, some studies have investigated teacher expectations without

including student actual achievement. Brophy and Good (1970) asked teachers to rank their students according to students' achievement and used teachers' ranking as the proxy for teacher expectations. A few Dutch studies have examined teacher expectations by having teachers provide track recommendations for each of their students (e.g., De Boer, Van der Werf, Bosker, & Jansen, 2006; de Boer et al., 2010; van der Hoeven-Van Doornum, 1994). The research approach used in those studies was analogous with the current study, which may provide new evidence that teacher predictions can be regarded as a good indicator of teacher expectations.

The results of this thesis have shown that teachers held varying social and reading expectations for their individual students with ASD, which may reflect the idea that teachers varied in their social versus their reading expectations. Among teachers' diverse reading expectations and social expectations, more students were expected to make some degree of increase in social development compared with reading. The finding was analogous with Witmer and Ferreri's (2014) study in which most teachers (including special education teachers, general education teachers, school consultants, and paraprofessionals) had low expectations for their ASD students' academic achievement. They did not expect their middle school and high school students to reach grade-level achievement in academic areas (Witmer & Ferreri, 2014). In addition, when checking students' Individual Education Plan (IEP), only half of the students had academic goals, but most of their IEP goals related to behaviour, social skills and communication rather than to learning (Witmer & Ferreri, 2014). This further confirmed that some teachers seemed to place more emphasis on students' social

development than their academic achievement (Cameron & Cook, 2013; Johnson-Fedoruk, 1991) and this was evident in the findings of the current thesis.

A relevant question arises reflecting the possible reasons for the lower academic achievement of students with ASD. Ashburner, Ziviani, and Rodger (2010) investigated mainstream teachers' perceptions of students' capacity for academic performance of students with and without ASD. They found that students with ASD were six times more likely to be judged to underperform academically than their typically developing peers (Ashburner et al., 2010). The underachievement of students with ASD may be partly because of their learning ability, but also because their teachers held lower expectations for their academic achievement. Teachers' lower expectations may have led teachers to provide less challenging learning opportunities to ASD students and to have interacted with them in a less supportive way than they interacted with and provided for students without ASD, which will be discussed later. As a result, students' potential in their academic endeavours may not be fully realised because of the limited learning opportunities. Therefore, the current research has highlighted the significant role of having high expectations for ASD students regarding their academic achievement.

The weak correlation between teachers' reading expectations and social expectations may reveal that teachers' expectations for those two aspects were fairly independent, which was not consistent with previous studies (Tauber, 1997; Teklu & Kumar, 2013). This inconsistency may be due to differences in the measures of academic and social expectations

used across various studies. However, teachers' beliefs about teaching children with ASD (in Study Three) may also serve to explain the independence. When talking about teachers' perceptions of children with ASD, teachers' self-reported data showed that most teachers, especially teachers from the L1 and L2 groups, focused on the behavioural and social interaction deficits of students with ASD, whereas they did not mention the possible concurrent cognitive impairments of their ASD students. This may reveal that most teachers held some knowledge about autism and they understood that ASD students may not have cognitive impairments. Therefore, they may treat students' academic and social learning needs differently. A recent study conducted by Able and colleagues revealed that general education teachers struggled with how to balance and integrate students' social and academic needs into their classroom settings (Able et al., 2015). This may further support the idea that teachers interacted with the individual students differently in their reading and social spheres.

Another interesting finding was that most teachers who expected their particular students to make some increase in reading tended to expect their students to make improvement in their social development as well (for the three aspects: maintaining social interaction actively, demonstrating perspective-taking skills, and engaging in social activities positively). In contrast, very few teachers who expected their students to stay at the same level in reading in one year predicted social improvement of their students (for all three aspects). Further analysis showed that there were no statistically significant correlations between teachers' social expectations and reading expectations. Together these findings may

imply that teachers themselves and their specific beliefs may play a significant role in the formation of expectations.

Teacher Knowledge as a Base of Teacher Expectations

The relation between teacher autism-specific knowledge and teacher expectations for ASD students was examined in the present research. Previous studies have shown that teachers' knowledge of students with special needs may relate to their expectations for those students (Bender & Smith, 1990; Paape, 2000). Generally, teachers appeared to have higher expectations for students with special needs when they secured more knowledge about the specific students (Blotnicky-Gallant et al., 2014; Sadler, 2005). However, very few studies have focused on teacher knowledge about autism and teacher expectations for students with ASD. The current thesis intended to provide some clarity around this aspect.

In Study One, it was found that teachers' level of autism-specific knowledge was related to their role, their experiences of teaching children with ASD, and their gender. Those teachers were more likely to be knowledgeable with regard to autism if they were special education teachers, teachers with more than 15 years of experience teaching ASD students, or female teachers. When examining teacher expectations and teachers' demographic characteristics in Study Two, it was found that the proportion of special education teachers who expected their students to make some degree of increase in reading was greater than that of their general education counterparts. In addition, the majority of teachers in the L2 group had more than 15 years of experience in teaching children with ASD, whereas half of the

253

teachers in the LS group had less than five years of experience. In Study Two, of four male teachers, three expected their students to stay at the same level in reading in one year, but they were all general education teachers.

Bearing these findings in mind, some relationships may be identified. Firstly, one of the reasons that a higher number of special education than general education teachers expected their students to make some degree of increase in reading was that special education teachers were more knowledgeable about autism than their general education counterparts. Secondly, teachers who expected their students to make two levels of increase in reading appeared to hold more accurate knowledge regarding autism than teachers who expected their students to make fewer increases in reading. Moreover, the reason why three out of four male teachers in Study Two expected their particular students to make little improvement in reading may be due to those teachers having less accurate knowledge about autism than some of their female counterparts.

Those conclusions may further provide two possible clues. On the one hand, teachers' autism-specific knowledge seemed to relate to teacher expectations for children with ASD. Teachers with more accurate autism-specific knowledge were more likely to expect their students to make some degree of increase in reading, and vice versa, which highlighted the importance of teachers' autism-specific knowledge in influencing teacher expectations. On the other hand, teachers' demographic characteristics may play a role in influencing teacher expectations for children with ASD and teacher knowledge of autism. Previous studies have examined teacher knowledge of autism mainly from the perspective of

254

the teachers' role (Humphrey & Symes, 2013; Segall & Campbell, 2012), whereas very little research has explored the relationship between teachers' demographic characteristics and teacher expectations. Among them, teachers' working experience (Brophy, 1983; Flowerday & Schraw, 2000) and teachers' gender (Watson et al., 2015) has been shown to be related to teacher expectations. Further studies investigating teacher demographic characteristics and teacher expectations are needed.

Teachers' self-report data also revealed that teachers' knowledge about how to teach students with ASD effectively and teachers' experience of working with those students was closely related to teachers' self-efficacy, which was consistent with previous findings (Sanini & Bosa, 2015). In Study Three, teachers (a large proportion of them were from the L1 and L2 group) having favourable self-efficacy mentioned that they were knowledgeable about autism teaching and experienced in teaching children with ASD. In contrast, others (the majority of them were from the LS group) having less favourable self-efficacy pointed out that they lacked the appropriate knowledge about teaching children with ASD, and lack of experience with those students led them to put self-limitations on their abilities in helping students with ASD. The findings not only confirmed that teachers' working experience and teachers' self-efficacy may vary in accordance with teacher expectations (Brophy, 1985; Good & Brophy, 2008), but also provided new evidence that teachers' knowledge about autism may relate to teacher expectations and teacher self-efficacy.

Differential Beliefs and Instructional Practice

The current research has identified and categorised teachers by their reading expectations. Teachers with different levels of reading expectations were found to differ in their beliefs about ASD students and changing the particular ASD students to a different group, and their self-efficacies in working with those students. More importantly, these different teacher expectations were then enacted differently in the classrooms of the L2, L1 and LS group teachers.

With regard to teacher beliefs about children with ASD, the teacher self-report data revealed that the L2 and L1 group teachers held more favourable beliefs and more comprehensive understanding about autism in comparison to their LS counterparts. It appeared that teacher expectations and teacher beliefs were related. Teachers who expected their students to make greater improvements in reading had a better understanding about the characteristics of autism and held more favourable beliefs about children with ASD. In contrast, those who expected their students to make no measurable improvement in reading had limited understanding about autism and held less favourable beliefs about their particular students.

In terms of teacher's self-efficacy in teaching students with ASD, most teachers in Study Three held favourable beliefs in their abilities to promote student learning. Consistent with previous studies (Feldlaufer, Midgley, & Eccles, 1988; Soodak & Podell, 1996), teachers believed that they played a crucial role in students' learning and that they were able to promote student learning in accordance with their expectations for those students. However,

256

the L1 and L2 group teachers were more likely than their LS group counterparts to believe in their abilities to enhance students' learning. The findings confirmed that teacher's self-efficacy may play a role in influencing teacher expectations for student learning (Archambault et al., 2012; Woolfolk Hoy et al., 2009). It was also analogous with Li's (2014) finding which showed that teachers with high normative expectations had greater efficacy, while teachers with low expectations had lower efficacy (Li, 2014). That is to say, teacher's self-efficacy seemed to increase with their teacher expectations.

Teacher expectations, along with teacher beliefs and teacher self-efficacy, could further influence the teaching plans and the learning opportunities teachers provided for their students, and ultimately influence student learning as has previously been suggested (Li, 2014; Rubie-Davies, 2008). However, the current thesis provided a somewhat different picture. On the one hand, teachers' beliefs with regard to planning lessons or activities for individual students with ASD and assessing their students' success were mainly related to the teachers' role (either special education teachers or general education teachers) rather than teacher expectations. Whereas special education teachers appeared to focus on individualisation when planning lessons for ASD students, general education teachers emphasised planning for the whole class or group. When assessing the development of ASD students, special education teachers tended to use the special assessment tool designed for ASD students whereas general education teachers were inclined to use a national standardised test. This finding was inconsistent with previous research, which showed that teacher

normative expectations played a significant role in influencing teachers' instructional

planning, and in turn influenced student learning (Rubie-Davies, 2014). It may provide new

evidence that teachers' different roles and working style may influence teachers' beliefs about

what kind of learning opportunities they would plan for individual students with ASD. It may

also imply that further examination is needed about the role of teacher normative

expectations in influencing teacher beliefs about how learning should be delivered to students

with ASD.

On the other hand, teacher beliefs about changing groups varied in line with the

teacher expectation groups. Although most teachers in the current thesis grouped students by

their ability, which was consistent with previous studies (Cahan, Linchevski, Ygra, &

Danziger, 1996; Mills, 1998; Rubie-Davies, 2008), the L2 group teachers still took students'

learning strengths and teaching content into account when grouping. They appeared to use a

more flexible approach to group students and more frequently changed students into different

groups than their L1 and LS group counterparts. Although the L1 group teachers had not

grouped their individual students with ASD flexibly, they had changed some individual

students with ASD to different groups because they thought that those students had made a

large improvement, and putting them into a higher group would benefit their learning.

However, the LS group teachers did not change any individual students' group. Hence,

teachers with different reading expectations seemed to provide different opportunities to their

students through the ways in which students were grouped, in either mixed-ability or

homogeneous groups.

258

Teacher instructional practices between the L1, L2 and LS group teachers also differed. Generally, L1 group teachers behaved more similarly to L2 group teachers than did LS group teachers. They expended more effort on teaching a concept and spent less effort on behavioural management than the LS group teachers. Similarly, compared to the LS group teachers, the L1 and L2 group teachers provided more feedback and explained more to their students to enhance student understanding. They less frequently gave students answers to questions and never criticised them. They spent less time repeating student answers and making procedural statements. Those differences appeared to show that they provided quite different learning opportunities to their students with ASD when compared with the LS group teachers, which was similar to previous studies where high expectation teachers and low expectation teachers interacted with their students quite differently and the teacher practices then resulted in different academic achievement among students (Li, 2014; Rubie-Davies, 2008).

Because of teachers' differing expectations, beliefs about ASD students and autism teaching, along with different instructional practices, the socioemotional climate in the classrooms of the L2, L1 and LS group teachers may also be different. Teachers from the L2 and L1 groups seemed to provide their students with more support than teachers from the LS group did. For example, they provided students with more feedback about their learning; more advanced support (rephrasing questions, explaining further, and encouraging students) when students could not answer questions correctly; they managed students' behaviour in a

negative way less frequently; and they did not criticise students. Those instructional differences were consistent with the findings regarding the socioemotional climate literature and high expectation teachers (Rubie-Davies, 2007, 2008). The findings in the current thesis appeared to show that the L1 and L2 group teachers created a more caring and supportive socioemotional environment in their classrooms than the LS group teachers.

In addition, the teacher self-report evidence also revealed that the L1 and particularly the L2 group teachers provided their students with ASD with more opportunities to work with a range of peers, therefore the socioemotional climate of these classrooms may also differ from the classrooms of the LS group teachers in that way. The L1 and L2 group teachers were more likely to create a climate in which students in the classroom worked as a cooperative whole. In contrast, LS group teachers seemed to create a climate in which students worked in different groups rather than as a whole.

Students of the L1, L2 and LS group teachers may be provided with different learning opportunities and, further, have different learning outcomes. Students of the L1 and L2 group teachers may be provided with clearer instructions regarding academic learning, and have more opportunities to work with their peers with different learning abilities; they may get more support from their teachers when learning a new concept or question; they may be exposed to a classroom in which they feel warm and supported by their teachers. Therefore, their learning would be enhanced (Li, 2014). In contrast, students of the LS group teachers may be provided with more interactions regarding their behaviour and class procedures, and have limited opportunities to work with a variety of peers, and they may get less effective

260

support from their teachers regarding academic learning. Since they were criticised by their

teachers at times, they may be exposed in the classroom, and, as a result, they may feel

tension and less support. Their learning may be hindered (Rubie-Davies, 2008, 2014).

Taking together the variation in teacher expectations, teacher beliefs, and teacher

instructional practice found in the current thesis, it appeared that the beliefs and teaching

practices of teachers from the L2 and L1 group reflected the findings related to both high

expectation teachers and effective teachers. Previous studies have shown that high

expectation teachers held incremental notions of intelligence (Rubie-Davies, 2007, 2008);

they grouped students in a flexible way (Li, 2014; Rubie-Davies, 2007); they provided

various opportunities to promote student learning, such as frequently providing feedback

(Rubie-Davies, 2007, 2008), and they had high levels of self-efficacy (Li, 2014). Similarly,

effective teachers have been shown to focus on students' learning capability and believe that

promoting students' learning is their responsibility (Cohen, Raudenbush, & Ball, 2003;

Jordan, Glenn, & McGhie-Richmond, 2010); they group students in a flexible way (Blair,

Rupley, & Nichols, 2007); they spend more time on academics (Burchinal et al., 2008); they

help students' understanding by continuously questioning and probing (Dolezal, Welsh,

Pressley, & Vincent, 2003); they give students specific praise (Bohn et al., 2004); and use less

criticism and punishment (Bohn et al., 2004). Those similarities may mean that the L1 and

L2 group teachers in the current thesis worked like high expectation and effective teachers.

In contrast, the behaviours and beliefs of teachers from the LS group were similar to the findings regarding low expectation teachers and less effective teachers in previous studies. Low expectation teachers spent less time tutoring students and asking students less open questions (Rubie-Davies, 2007, 2008). They also provided a less supportive classroom environment (Li, 2014). Likewise, less effective teachers held fixed notions of intelligence so they did not believe that their teaching would make a difference for students with learning difficulties (Rosenfeld & Rosenfeld, 2008). They were less likely to provide feedback to students in the class (of English as a foreign language) in comparison to effective teachers (Farahani & Mirsharifi, 2008), and they created a learning environment that is not supportive of students emotionally and psychologically (Weinstein, 2002).

Existing studies have shown that students' learning outcomes can be very different when they are placed with different types of teachers. Generally, students would benefit from their high expectation and effective teachers, who would generate desirable academic and social outcomes (Rubie-Davies, 2008; Burchinal et al., 2008). In contrast, students' learning outcomes may be arrested if they studied with low expectation or less effective teachers. Consequently, the current research may reveal that students of L1 and L2 group teachers may differ in their learning outcomes from their peers of LS group teachers. Considering that some students were more vulnerable to teacher expectations (Jussim & Harber, 2005; Madon et al., 1997), and children with ASD were susceptible to being stigmatized because of the label (Al-Sharbati et al., 2015; Hornstra, Denessen, Bakker, van den Bergh, & Voeten, 2010),

students of LS group teachers may have suffered from teachers' low expectations, and this

could have resulted in limited learning achievement for their students.

Contribution to Knowledge

The current thesis provides evidence in identifying teacher expectations of individual

students with ASD, in both academic and social aspects. Both the specific student type

(students with ASD) and the social expectations have been little researched in the expectancy

field. The characteristics of autism and the current autism teaching situation may contribute

to the formation of teacher expectations for students with ASD, which will be discussed

below.

The major contribution of this thesis to the existing research has been the focus on

teacher expectations for individual students with ASD rather than for typically developing

students or students with other disabilities. Although considerable research has shown that

teacher expectations relate to students' learning, no matter whether the students were with or

without special needs (Babad & Taylor, 1992; Batzle, Weyandt, Janusis, & DeVietti, 2010;

Good & Brophy, 2000; Rubie-Davies, 2008), the relations between teacher expectations and

ASD students' learning has not been explored deeply. This thesis may be the first piece of

research examining teacher expectations for this type of student and its relevant factors. No

other studies could be located that had examined teacher expectations of students with ASD

in such depth or from multiple perspectives. The findings of the present thesis therefore add

new evidence about the important role of teacher expectations for ASD students' learning.

Existing research has shown that a diagnostic label may play a role in influencing teacher expectations (e.g. Algozzine et al., 1977; Cook, Semmel, & Gerber, 1999; Hornstra et al., 2010). Generally, teachers hold low expectations for labelled students, such as students with learning disabilities (Ferri, Keefe, & Gregg, 2001; Woodcock & Vialle, 2011), students with cerebral palsy (Peeters, Verhoeven, & de Moor, 2009), and students with attention deficit/hyperactivity disorder (Batzle, Weyandt, Janusis, & DeVietti, 2010) in terms of their academic achievement. Witmer and Ferreri (2014) investigated teacher's academic expectations for ASD students as a part of their study and showed a similar finding. However, the results of the current research showed that giving a student a label of ASD may not strictly result in teachers' lowered academic expectations for the student, but rather, teachers' personal traits and beliefs may matter (which will be discussed later).

The present research also added new knowledge to the field of teachers' social expectations. As suggested earlier, traditional social expectations research has focused mainly on teachers' social expectations for typically developing students and has identified the social skills that were generally critical for students having both successful academic and social experiences at school (e.g. Lane et al., 2006; Van Horn et al., 2001). The current research is the first to explore teachers' social expectations for individual ASD students. The findings showed that ASD students' current social skills and behaviour was one of the factors that influenced teachers' social expectations for them and also demonstrated that other factors might be related. Furthermore, teachers' self-reported data revealed that some teachers not

264

only held social expectations for their ASD students, they also tried to provide opportunities for these students to improve their social skills.

Both general education teachers and special education teachers were investigated in the present research. Previous studies have explored teacher expectations for students with special needs mainly from the perspective of general education teachers (Clark, 1997; Hornstra et al., 2010) rather than special education teachers. This may be partly due to more and more children with special needs being studied in mainstream schools and general education teachers tending to have low expectations for children with special needs (Koonce et al., 2004; Stinnett et al., 2001), and may be partly because special education teachers' expectations and their possible impacts on student learning have been ignored. The current thesis explored both general education teachers' and special education teachers' expectations for children with ASD, and found that both types of teachers may hold low expectations, which were not beneficial for student learning. It highlighted the importance of examining special education teachers' expectations for students with ASD, and emphasised that the expectations both types of teachers held needed to be further explored. In addition, research findings of the present research revealed that special education teachers and general education teachers may have different beliefs in terms of how to plan lessons for and assess the improvement of students with ASD, which may be worthwhile for further examination.

The current thesis supported that both students' characteristics (e.g., Hinnant et al., 2009; Jussim & Eccles, 1995; Stinnett et al., 2001) and teachers' personal traits (e.g.,

265

Archambault et al., 2012; Plaks, Stroessner, Dweck, & Sherman, 2001; Roeser, Marachi, & Gehlbach, 2002) played a role in forming teacher expectations. On the one hand, students' current reading achievement and level of detrimental behaviour related to teachers' reading expectations and social expectations, which may support the idea that teacher expectations were related to students' current performance (Li, 2014). On the other hand, previous research has shown that teacher expectations can be influenced by student general intelligence (Gut et al., 2013). Moreover, ASD students with mild to moderate intellectual disability were anticipated to experience higher expectations for their academic success than their peers with severe intellectual disabilities (Witmer & Ferreri, 2014). It was predicted that teachers may have overall high expectations for their individual students with high functioning autism because those students' function at higher levels than their peers without high functioning autism (Schopler & Mesibov, 2013). However, the current study appeared to show a different picture: teachers did not hold overall higher reading expectations for their high functioning autism students, and did not hold overall low expectations for their low functioning students. Instead the differences appeared to relate to teacher differences. The current research suggests that the severity of students' learning difficulties may not be a basis for the formation of teacher expectations.

Moreover, it appeared that teacher-related factors may play a more important role in forming teacher expectations than student-related characteristics because: (a) Teachers' social expectations were not closely related to students' current social performance regarding social reciprocity and social participation/avoidance; (b) Some teachers expected their students to

make improvement in both the reading and social area, but teachers' social expectations were not related to their reading expectations; (c) Some teachers held similar reading expectations for their different individual students with ASD, no matter what the current reading level of the student was. In addition, consistent with previous studies (Li, 2014; Rubie-Davies, 2014), this thesis showed that teacher expectations related to teacher beliefs and teacher knowledge about autism. The current research may provide new evidence that teacher expectations for students with ASD may not be based mainly on student characteristics, but rather, teacher personal variables and beliefs.

Implications for Educational Practice

The current research not only identified teachers' reading expectations for students with ASD, but also found a close relationship between teachers' expectations and teachers' personal characteristics. Teachers' varying expectations, along with their beliefs and knowledge, may be conveyed to ASD students through the learning opportunities teachers plan for them and the verbal behaviours they express to those students, which may eventually influence ASD students' learning. In order to better promote individual ASD students' learning, more frequent and direct interactions between teachers and individual students with ASD are required (Baric, Hellberg, Kiellberg, & Hemmingsson, 2016). Through exposure to such one-to-one interactions, teachers were less likely to hide their expectations for their ASD students than in class-level or group-level interactions, and their students were more likely to perceive their teachers' expectations for them than they were in other types of interactions.

Since the current thesis revealed that ASD students' learning may be influenced by teachers' expectations, the first implication is identification of teachers with different expectations for their students with ASD. As students with ASD may study in either special education schools or general education schools, identifying the expectations of all types of teachers working with ASD students is imperative. Moreover, identifying teacher expectations may help teachers be aware of the impacts of their expectations on ASD students, and may provide a clue in terms of what and how high expectation teachers believe and behave, which may further help in modelling the practices of high expectation teachers.

Once teachers' expectations for students with ASD are recognised, further steps can be taken. As discussed previously, the L1 and L2 group teachers of the present research shared many similarities with high expectation teachers, while the LS group teachers and low expectation teachers were alike in their beliefs, self-efficacy, and instructional behaviours. Considering students have different learning outcomes when studying with teachers with high or low expectations, having high expectations for students with ASD is desirable. Since the beliefs and practices of high expectation teachers have been identified (e.g., Hattie, 2008; Rubie-Davies, 2008; Rubie-Davies, Hattie, Townsend, & Hamilton, 2007), and teachers' high expectations can be fostered (Rubie-Davies, 2014; Rubie-Davies, Peterson, Sibley, & Rosenthal, 2015), providing relevant programmes for teachers to enhance their expectations for students with ASD seems feasible. In order to ensure the effectiveness of these programmes, concerns for teacher expectations, teacher beliefs, teacher self-efficacy, and teachers' instructional behaviours should be included when designing these programmes.

268

Teacher knowledge of autism played a role in influencing teacher expectations for children with ASD, as did teacher self-efficacy in working with children with ASD. However, most teachers in the current thesis harboured some misconceptions about autism. Since teachers need to be highly qualified to provide appropriate services for children with ASD (Yell, Drasgow, & Lowrey, 2005), and short-term training has been helpful in enhancing their knowledge (Lerman, Vorndran, Addison, & Kuhn, 2004; Mavropoulou & Padeliadu, 2000), providing special training for both special education teachers and general education teachers regarding their knowledge about autism remains a matter of some urgency. In addition, it appeared that there should be a different training emphasis for general education teachers and special education teachers. For general education teachers, the specific training should focus on broad general information about children with ASD, including knowledge related to etiology, diagnosis, intervention, and outcomes. For special education teachers, the specific training should emphasise the etiology and diagnostic information about children with ASD.

Furthermore, the current thesis appeared to reveal that it is time to reflect on and improve the existing teacher education programmes (excluding special education programmes), which include only a few courses or lectures about students with special needs. However, teachers' insufficient knowledge about ASD and teachers' insufficient training (according to some teachers' self-reported data) in the current study may imply that they were not well prepared to work with ASD students. Institutions of teacher education need to

carefully revise the existing teacher education programmes and offer autism-related or autism-specific professional development programmes to pre-service and practising teachers so that they can learn about autism and learn how to work with students with ASD.

Finally, children with ASD vary from one individual to another (Crisman, 2008; Tager-Flusberg, 1996). Therefore, individual teachers who have children with ASD in their classes may have entirely different training and support needs. The question arises as to how to provide consistent and suitable training or support to meet individual teacher's needs. The government, institutions of teacher education, and schools teaching students with ASD need to make a joint effort to: encourage individual teachers to consistently enhance their knowledge of ASD; to help teachers have high expectations for individual students with ASD (Ables et al., 2011; Swiezy, Stuart, & Korzekwa, 2008); and to strengthen cooperation between teachers and parents of children with ASD, between special education teachers and general education teachers, and between teachers and teacher aides.

Limitations and Future Directions

The current thesis firstly explored what autism-specific knowledge teachers had from the perspective of 259 teachers. Although there were 259 participants in this study, there was an imbalance between the number of general education teachers and special education teachers, between the number of male and female teachers, and between the number of teachers with different teaching experience. Therefore, this study could have been improved by recruiting a more equal proportion of teachers with differing demographic characteristics. In addition, the findings revealed that it is necessary to further develop and refine the Autism

270

Survey for the purpose of reflecting teachers' knowledge gaps and assisting in the formation

of a targeted training plan. One item in the Autism Survey should be treated with

considerable caution. Specifically, the item of "sensory integration therapy is an effective

treatment for autism and its symptoms" was treated as true by Able and colleagues in 2011

(Able, Ashby, & Swiezy, 2011). However, later research showed that there was not sufficient

evidences to support the use of sensory integration therapy as an effective therapy for

children with ASD (see Lang et al., 2012, for a review).

Because teachers might acquire knowledge from a variety of different ways, a future

study could investigate how teachers obtain information about autism and, furthermore,

identify the main resources for teachers to get more up-to-date knowledge about autism.

Such research may provide information regarding how to provide effective in-service training

for teachers serving students with ASD. In addition, this preliminary study has not addressed

an interesting question related to both types of teachers' knowledge regarding useful

strategies for the teaching of children with ASD. Previous studies have shown that

inadequate knowledge of useful strategies has had some undesirable impacts on both children

and teachers (Gable, Tonelson, Sheth, Wilson, & Park, 2012; Hendricks, 2011; Segall &

Campbell, 2012). Future studies may extend the current research by adding teachers'

knowledge of effective strategies for teaching children with ASD.

Teachers' reading expectations and social expectations for children with ASD were

then examined in the present research. Because there were no normative assessment tools

available that could assess the reading achievement and social performance for students with ASD, this study only explored teacher predictions of those students with regard to the two aspects, and used teacher predictions for levels of increase as a proxy of teacher expectations. Consequently, the present research was not able to test whether teacher expectations for their ASD students were accurate or not. Given that unrealistically high or low expectations could be harmful for both teachers and students (Kauffman & Landrum, 2009), further examining the accuracy of teacher expectations for children with ASD and their importance is to be encouraged. It is also possible that specific measures could be developed that could examine teacher expectations for children with ASD by measuring students' actual achievement and then comparing this with teachers' expectations.

Teachers were grouped into three groups which were based mainly on the number of levels teachers predicted their students would gain. Teachers' beliefs and practices were further examined and compared for those three teacher groups. Although this study found that there were some significant differences between the three teacher groups in terms of their beliefs and practices, the small sample size of the respective groups restricted the generalisability of the findings from the current thesis. It will be worthwhile for future studies to re-affirm the way teachers are classified by including larger samples and investigating whether other types of teachers may be identified.

In addition, the severity of autism seemed to not relate to teacher expectations in the current study. Some teachers held high expectations for students with low functioning autism whereas others held low expectations for students with high functioning autism. This might

272

be partly due to the small sample size of the study. Given that previous studies with larger

sample sizes have shown that teachers' attitudes towards children with ASD were influenced

by students' severity of autism (e.g., Barnes, 2008; Segall & Campbell, 2014), and teachers'

attitudes regarding students were partially formed by teachers' primary cognitive expectations

for students (Brophy & Good, 1974), it might be of interest to further explore with a larger

sample size whether the severity of autism might be a factor influencing teacher expectations

for and teacher attitudes towards students with ASD.

Along with sample size, another limitation was that some variables that may influence

teacher expectations could not be considered in this study. Variables like students' ethnicity

(Gregory & Huang, 2013; Sorhagen, 2013) and age (Kuklinski & Weinstein, 2001; Rosenthal

& Jacobson, 1968) that may correlate with teacher expectations were not examined. In

addition, Further studies that include a larger number of teachers and ASD students could

advance understanding.

A further limitation of the current thesis was that the 23 teachers who were observed

in Study four were a subset of the 27 teachers in Study Two and Three. It is possible that

some teachers in Study Four may have acted in a certain way when being observed because

they knew that the current research was about teacher expectations for ASD students. That is,

it is possible that some teachers may have been primed during the observation. Therefore,

any generalisation of these results should be made with caution. In addition, a large number

of analyses regarding a wide variety of observational categories were conducted based on a

small sample size. This would increase the likelihood of a Type 1 error occurring in the analyses. Hence, the results from such analyses should be treated with considerable caution. Again, future studies including more participants would add to the understanding of teacher expectations for students with ASD and teachers' verbal behaviours towards those students for whom they held specific expectations. In addition, this research revealed that teachers with different expectations may not only differ in their instructional practices, but also in the socioemotional climate they create in the classroom, therefore it will be of interest to further explore the relations between teacher expectations and the socioemotional climate they create, particularly for students with ASD .

Teachers in the current research held diverse expectations for students with ASD in both reading and social aspects. Previous studies have shown that teachers had different normative expectations for students in reading (Rubie-Davies, 2008), and English (Li, 2014) when English was the student's second language. Future studies could use the findings of the current research to form a more comprehensive questionnaire with the purpose of exploring teachers' expectations in different areas (reading, maths, or science) for children with ASD, and examine the relations between those different expectations by involving student's real achievement. In addition, since teachers' normative expectations have been shown to relate to students' academic achievement (Li, 2014; Rubie-Davies, 2008), it may be of interest to further explore teacher class-level expectations for students with and without ASD.

Teachers' social expectations for ASD students were preliminarily investigated in the present thesis. Some questions that emerged from the findings need to be further explored.
274

For example, how do teachers form their social expectations for ASD students? Future research could observe the social behaviour of the children with ASD in classrooms, which would provide a measure that is independent of teacher report and thus strengthen the study design. In addition, questions such as why teachers held more favourable social expectations than reading expectations for students with ASD, and how teachers' social expectations were transmitted to their individual ASD students, are worth exploring. In order to understand the answers to those questions, a systematic social curriculum or programme for all students with ASD may be needed. This is mainly because teachers' self-reported data showed that there was no systematic curriculum to support individual students in their social development in mainstream schools. With a systematic social curriculum or programme, researchers and teachers (especially general education teachers) would be able to use it to teach and assess students' social development in a more formal way; to observe how teachers' social expectations are conveyed to ASD students when teaching students social skills; and to compare the effectiveness of teaching social skills in special education and mainstream schools. Although whether mainstream schools need to use a social curriculum to support individual ASD students is outside the scope of this research, it may be worth exploring.

Teachers' self-report data showed that parent-teacher relationships appeared to play a significant role in promoting the development of children with ASD. Future research may examine the quality of parent-teacher relationships in relation to teachers' self-efficacy in teaching ASD students. In addition, previous studies have shown that parental expectations

for students (Neuenschwander, Vida, Garrett, & Eccles, 2007; Yamamoto & Holloway, 2010), and congruence of parental expectations and teacher expectations for students related to student learning (Benner & Mistry, 2007). Hence, further exploration about whether parents and teachers held similar expectations for children with ASD, and what factors influence the congruence or incongruence between teacher expectations and parental expectations for children with ASD is needed.

The current thesis firmly concentrated on what the teacher expectations for children with ASD were and how these might be influenced by a range of individual factors, such as teacher beliefs' about autism teaching, and teachers' verbal behaviours. However, some ecological factors, such as the relationship between teachers and students, between teachers and their colleagues, school policies (Weinstein, 2002) that may also influence teacher expectations have not been examined in this research. Future studies may explore teacher expectations for children with ASD from an ecological system (Bronfenbrenner, 2009) perspective, which may help us understand the possible influence of teacher expectations on children with ASD from a broader perspective.

Another aspect that was outside the scope of the current thesis was teacher aides. Teachers talked about the role of teacher aides in the interviews and teacher aides worked with students with ASD during the observations. They took responsibility for a large proportion of interactions with students with ASD, and the number of those interactions exceeded the number of interactions between teachers (general education) and students with ASD. However, ASD students may not benefit from their teacher aides. Previous research

276

has shown that teacher aide interactions with students with special needs is of much lower quality than the interactions of teachers with students (Symes & Humphrey, 2012), and the more teacher aide time students with special needs had, the less they learned (Blatchford, Russell, & Webster, 2012). It would be worthwhile to further investigate how teacher aides interacted with students with ASD in New Zealand; whether teacher aides and teachers have similar expectations for children with ASD; and whether teacher aide interactions would be influenced by teacher expectations for the specific student.

Conclusion

Teacher expectations played a role in influencing ASD students' learning. The results of the current research provided additional evidence in support of the contextual model of teacher expectations developed by Rubie-Davies (2014) as follows: Teachers have some knowledge about autism and have particular beliefs about students with ASD. Teachers may form specific expectations for individual students based on their particular beliefs and the information they have received regarding those students. Those expectations, together with the teachers' role will lead teachers to consider what appropriate learning opportunities they should provide to students with ASD and how they should interact with those students. ASD students' learning may be influenced through participating in the learning activities that teachers have offered, and interacting with teachers and peers in the classroom.

The current thesis makes a significant contribution to the teacher expectancy field by exploring teacher expectations for children with ASD. This new perspective has not only

raised the importance of identifying teacher expectations for students with ASD but also

answered how those expectations could influence ASD students' learning. Being aware of

the possible influences of their expectations on ASD students, teachers may be willing to

improve their teaching practices when working with ASD students, which will benefit the

social and academic development of ASD students. In addition, the present study provided

evidence of the important role of teachers rather than students in shaping teacher

expectations. Teachers are the key to making a difference for students. To provide the most

appropriate learning opportunities to ASD students and maximise their learning outcomes,

more studies need to explore teacher variables in the formation and transmission of teacher

expectations for students with ASD.

<div align="center">**References**</div>

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Appendices

Appendix A-1

PARTICIPANT INFORMATION SHEET

BOARD OF TRUSTEES/PRINCIPAL

Title of Project: Teacher Expectations for Children with Autism spectrum disorder

Research Team: Associate Professor Christine Rubie-Davies (Principal Investigator), Dr. Louise Keown (Co-Investigator) and Ms. Zhuoni Cai (University of Auckland PhD student)

Researcher Introduction

My name is Zhuoni (Annie) Cai and I am under the supervision of Associate Professor Christine Rubie-Davies and Dr. Louise Keown in my second year of study as a PhD candidate in the School of Learning, Development and Professional Practice, Faculty of Education at The University of Auckland.

Project Description and Procedures

With advanced diagnostic criteria, more and more children have been diagnosed as children with autism spectrum disorder (ASD). Their core impairments have triggered lots of educational challenges to teachers. As all schools in New Zealand are required to provide special education for students with disabilities by the end of 2014, teaching children with ASD and providing appropriate service for them may be an inevitable issue for every school in the near future. The aim of this research is to examine the relationship between teacher expectations and children with ASD from the perspective of special and general education teachers. There are three studies in my research. Study one aims to investigate teacher knowledge regarding autistic children and autism teaching. The aim of study two is to examine teacher beliefs and teacher expectations for and regarding autistic children. The aim of study three is to explore teacher behavior in the classroom. I would like to invite all teachers at your school to participate in a survey (study one) and invite teachers in your school who have children with ASD, to take part in part two and three of my study. The data collection for this study will run throughout 2014.

With respect to study one, I would like to ask for your support to approach teachers through the administration office of your school. With your consent, I will send the anonymous

questionnaire to the administration office. And the staff in the office will help me send the questionnaire to the teachers in your school. Those who wish to participate will return their questionnaires to the administration office and I can collect all the questionnaires from the office. This will commence at the beginning of term 2. It should require no more than ten minutes for teachers to complete the questionnaire.

With respect to study two, the teachers participating in this research must have an autistic child in their class. The administration office of the school will help me to recruit teachers to participate in study two and three and the teacher PIS and CF for study two and three will be sent to the potential teachers by the administration office. If they do then they will be asked to complete the same questionnaire twice. The first questionnaire will be sent to teachers at the beginning of term 2. Teachers will be asked to assess their autistic children's current reading achievement and social development, and predict their year-end achievement related to those two aspects. The second questionnaire will be sent to teachers at the end of the year. At that time teachers will be asked to assess their autistic children's reading achievement and social development. It should require no more than five minutes for teachers to complete the questionnaire.

After completing the questionnaire for study two, teachers will be interviewed individually about their pedagogical beliefs related to autism teaching, autistic learning and their self-efficacy related to autism teaching. Each interview will last no more than 30 minutes and a digital voice recorder will be used to record each interview. The teachers interviewed can withdraw from the research up to and during the interview, in which case the recorder will be turned off. In this project the interview would be conducted by the researcher, Zhuoni (Annie) Cai.

With respect to study three, the researcher will mainly use observation to collect the data related to teacher behavior in the classroom. In either Term 2 or Term 3, as a non-participant observer, the researcher will observe each teacher's class one time. Every lesson will be audio taped. Those lessons to be observed should be part of the normal classroom program. Hence these observations should not involve any additional effort on the part of the teacher. Prior to the observation, the information sheet for the parents/caregivers will be sent to the children's parents/caregivers so that they will know that their children will be observed in the class. After the observation, the teacher participants will have the opportunity to make changes to the interview transcripts for accuracy. The copies of the questionnaire, interview schedule and observation profile will be provided for your review before the research is conducted in your school.

All participation is voluntary so the teachers, students and parents have the right to withdraw at any time without giving any reason. You may also withdraw your school and the teachers involved from the research at any time without giving any reason. Furthermore, any of the

participants from your school are eligible to withdraw information they have provided at any time prior to 5th December, 2014 (the deadline of data collection). However, considering the fact that the questionnaire in the first study is anonymous, you will not be able to withdraw that data after the questionnaires have been returned to me because I will not know the identity of those who have completed it.

I seek your assurance that the relationship between teachers and your school will not be affected whether teachers want to participate or not participate in this study and that their decisions will not affect the relationship between you and them. I also seek your assurance to students and parents that their participation/non-participation in this study will not affect students' learning and the relationship between them and you.

Please note that there is no financial remuneration being offered for participating in the project. However, your participation will help us to know more about autism teaching and will increase our understanding of a different dimension of teacher expectations. Further, this research may have some significant implications for teachers who devote themselves to providing an appropriate service to autistic children. It is highly unlikely that there will be physical or psychological harm for participants, yet if the participants have any undesirable feeling they will be offered a list of counseling services within the local community. We would appreciate it if you would sign the attached Participation Consent Form in support of participating in this research.

Data collection, analysis and retention
The researchers will take every precaution to maintain the confidentiality of participants' documents. All of the data from the questionnaire in study two will be number-coded once relevant information has been recorded, and they will be entered into a computer-based statistical tool. The hard copies of the questionnaires of study two will then be stored in a locked cabinet at the University of Auckland. The Consent and Assent Forms will also be stored in a separate, locked cabinet at the same premises as the questionnaires. Only the members in the research team will have access to all the relevant data. The data will be held securely by the research team.

The interviews and observations will be audio taped and recorded manually. After each interview/ observation, the researcher will transcribe it (the voice recording and the notes taken by the researcher) immediately into her personal computer at the university campus and then delete all recordings from the audio recorders. The data will be saved on the computer in a password-protected folder. A copy of each transcription will be sent back to the relevant teacher participant to ensure the accuracy of the transcription. Normally, there will be two weeks for a participant to review the transcript related to him/her. If the participants do not return the copy of the transcript in two weeks, the researcher will assume that the participants are happy with the transcript, which means that the researcher will proceed to analyze and edit the transcripts. Once the transcripts have been completed they will be sent back to the

research team and stored in a locked cabinet at the University of Auckland. The Consent Forms for the interviews and observations will be stored in the same location in a separate, locked cabinet. Only the members in the research team will have access to the consent forms and transcripts.

All data (hardcopy paperwork and digital copies) will be kept for six years. After that, the hard copies will be destroyed securely whilst the digital files will be securely deleted from the university's computer system.

Anonymity and Confidentiality

The researcher will take every precaution to ensure that any identifying information about your school and teachers will not be revealed when the research findings are reported or published. Specifically, pseudonyms and/or codes will be used to present participants and schools.

All the data and findings related to this study will be mainly used for the fulfillment of a PhD thesis at the University of Auckland. The researcher may also use them for publications and/or presentations in conferences. Any identifying information related to your school or teachers will not be revealed in the findings. I will be pleased to provide you with a summary of the research findings if you wish to have one.

Thanks for your time to read this information sheet and help in making this study possible. I look forward to your response.

Regards,

Zhuoni (Annie) Cai

University of Auckland contacts:

Researcher	Supervisor	Co-Supervisor & Head of School
Zhuoni (Annie) Cai	Associate professor Christine Rubie-Davies	Dr. Louise Keown
PhD Candidate School of Learning, Development and Professional Practice, Faculty of Education, The University of Auckland	School of Learning, Development and Professional Practice, Faculty of Education, The University of Auckland	School of Learning, Development and Professional Practice, Faculty of Education, The University of Auckland
z.cai@auckland.ac.nz	c.rubie@auckland.ac.nz	l.keown@auckland.ac.nz
020 453 0530	(09) 6238899 ext t 82974	(09) 6238899 ex 86435

For ethical concerns contact: The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Private Bag 92019, Auckland, 1142. Telephone 09 373-7599 ext.87830/83761. Email: humanethics@auckland.ac.nz

PARTICIPANT CONSENT FORM
BOARD OF TRUSTEES/PRINCIPAL

THIS CONSENT FORM WILL BE HELD FOR A PERIOD OF SIX YEARS

Title of Project: Teacher Expectations for Children with Autism spectrum disorder

Research Team: Associate Professor Christine Rubie-Davies (Principal Investigator),
Dr. Louise Keown (Co-Investigator) and Ms. Zhuoni Cai (University
of Auckland PhD student)

I have read the Participant Information Sheets regarding this research project and understand the purpose of this research. I have had the opportunity to ask questions and have had them answered satisfactorily.

- I agree that the researcher can have access to my school and teachers.
- I agree that this research can be carried out at my school according to the descriptions in the Participant Information Sheets.
- I agree that the administration office of my school will help the researcher to approach teachers for study one and will help the researcher to recruit teachers for study two and three.
- I agree that students and parents' participation/non-participation in study three will not affect students' learning and the relationship between them and my school.
- I agree that the researcher is eligible to survey, observe and interview teachers who teach autistic children from my school during school time.
- I agree that the relationship between teachers and my school will not be affected whether teachers want to participate or not participate in this study and their decisions will not affect the relationship between them and me.
- I understand that I can withdraw approval at any time up to the day before the arranged questionnaires, observation and interviews without explanation.
- I understand, however, that I cannot withdraw from the first study, an anonymous questionnaire, once the online survey has been completed.
- I understand that an audio tape will be used in each class observation and interview, and will be transcribed fully after the observation and interview.
- I understand that the participants will have a maximum of two weeks to review their transcripts of the recordings for accuracy after the interview and observation. The researcher will be able to analyze and edit the transcripts if the transcripts are not returned in two weeks.
- I understand that any identifying information regarding my school and teachers will not

be presented in the research findings which include the doctoral thesis, research reports or oral presentations.

- I understand that all data collected regarding this school and teachers will be kept and stored for six years in the University of Auckland and will be destroyed securely after six years.
- I understand that it is highly unlikely that there will be physical or psychological harm for participants, but if the participants have any undesirable feeling they will be offered a list of counseling services within their schools.
- I understand that the researcher will provide me with a summary of the research findings if I require these.
- I understand that the research findings will be presented in the doctoral thesis, research report or presentation and the researchers may present the findings at the University of Auckland or other conferences.

Signed: Date:

Name:
         (Please print clearly)
School:……………………………
Email: ……………………………
Contact telephone No: …………………

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office, Private Bag 92019, Auckland 1142, Telephone 09 373-7599 ext. 87830 / 83761. Email: humanethics@auckland.ac.nz.

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 2014 FOR A PERIOD OF THREE YEARS. REFERENCE NUMBER 011600.

Appendix A-3

PARTICIPANT INFORMATION SHEET
TEACHER

Title of Project: Teacher Expectations for Children with Autism spectrum disorder

Research Team: Associate Professor Christine Rubie-Davies (Principal Investigator), Dr. Louise Keown (Co-Investigator) and Ms. Zhuoni (Annie) Cai (University of Auckland PhD student)

Researcher Introduction

My name is Zhuoni (Annie) Cai and I am under the supervision of Associate Professor Christine Rubie-Davies and Dr. Louise Keown in my second year of study as a PhD candidate in the School of Learning, Development and Professional Practice, Faculty of Education at The University of Auckland.

Project Description and Procedures

With advanced diagnostic criteria, more and more children have been diagnosed as children with autism spectrum disorder (ASD). Their core impairments have triggered lots of educational challenges for teachers. As all schools in New Zealand are required to provide special education for students with disabilities by the end of 2014, teaching children with ASD and providing appropriate services for them may be an inevitable issue for every school in the near future. The aim of this research is to examine the relationship between teacher expectations and children with ASD from the perspective of special and general education teachers. There are three studies in my research. Study one aims to investigate teacher knowledge regarding autistic children and autism teaching. The aim of study two is to examine teacher beliefs and teacher expectations for and regarding autistic children. The aim of study three is to explore teacher behavior in the classroom. I would like to invite you to participate in a survey (study one) and invite you to also take part in part two and three of my study. The data collection for this study will run throughout 2014.

Your principal has given consent for me to send you the anonymous questionnaire, which will be conducted by the administration office of your school and should you choose to take part in the study you will return the questionnaires to the administration office. It should require no more than ten minutes for you to complete the questionnaire. I would be grateful if you would complete it within the next week. You can choose to take part in study one only (the anonymous questionnaire) or you can also take part in studies two and three as well which are outlined below.

With respect to study two, you will be asked to complete the same questionnaire twice (a different one from the anonymous one). Should you choose to participate this questionnaire will be sent to you shortly. You will be asked to assess your autistic child/children's current reading achievement and social development, and predict their year-end achievement related to those two aspects. The second questionnaire will be sent to you at the end of the year. At that time you will be asked to assess your autistic child/children's reading achievement and social development. It should require no more than five minutes for you to complete the questionnaire.

After completing the first questionnaire, you will be interviewed individually about your pedagogical beliefs related to autism teaching, autistic learning and your self-efficacy related to autism teaching. Each interview will last no more than 30 minutes and a digital voice recorder will be used to record each interview. You can withdraw from the research up to and during the interview, in which case the recorder will be turned off. In this project the interview would be conducted by the researcher, Zhuoni (Annie) Cai.

With respect to study three, the researcher will mainly use observation to collect the data related to teacher behavior in the classroom. In the second or third term of the academic year, as a non-participant observer, the researcher will observe your class one time. The lesson will be audio taped. The lesson to be observed should be part of the normal classroom program. Hence these observations should not involve any additional effort on your part. Prior to the observation, the information sheet for the parents/caregivers will be sent to the children's parents/caregivers so that they will know that their children will be observed in the class. After the observation, you will have the opportunity to make changes to the interview transcripts for accuracy.

Your participation is voluntary so you have the right to withdraw at any time without giving any reason. Furthermore, you are eligible to withdraw information you have provided at any time prior to 5th December, 2014 (the deadline of data collection). However, considering the fact that the questionnaire in the first study is anonymous, you will not be eligible to withdraw the data after you return the questionnaire to me.

I have sought an assurance from your principal that the relationship between you and your school will not be affected whether you want to participate or not participate in this study and your decision will not affect the relationship between your principal and you.

Please note that there is no financial remuneration being offered for participating in the project. However, your participation will help us to know more about autism teaching and will increase our understanding of a different dimension of teacher expectations. This research may have some significant implications for teachers who devote themselves to providing an appropriate service to autistic children. It is highly unlikely that there will be physical or psychological harm for you, yet if you have any undesirable feeling I can provide

you with a list of counseling services the local community. We would appreciate it if you would sign the attached Participation Consent Form in support of participating in this research.

Data collection, analysis and retention

The researchers will take every precaution to maintain the confidentiality of participants' documents. All of the data from the questionnaire in study two will be number-coded once relevant information has been recorded, and they will be entered into a computer-based statistical tool. The hard copies of the questionnaires from study two will then be stored in a locked cabinet at the University of Auckland. The Consent Forms will also be stored in a separate, locked cabinet at the same premises as the questionnaires. Only the members of the research team will have access to all the relevant data. The data will be held securely by the research team.

The interviews and observations will be audio taped and recorded manually. After each interview/ observation, the researcher will transcribe it (the voice recording and the notes by the researcher) immediately into her personal computer at the university campus and then the recordings will be deleted from the audio recorders. The data will be saved on the computer in a password-protected folder. A copy of your transcription will be sent back to you to ensure the accuracy of the transcription. Normally, there will be two weeks for you to review your transcript. If you do not return the copy of the transcript in two weeks with any amendments, the researcher will assume that you are happy with the transcript, which means that the researcher will be able to analyze and edit the transcripts. Once the transcripts have been completed they will be sent back to the research team and stored in a locked cabinet at the University of Auckland. The Consent Forms for the interviews and observations will be stored in the same location in a separate, locked cabinet. Only the members in the research team have access to the consent forms and transcripts.

All data (hardcopy paperwork and digital copies) will be kept for six years. After that, the hard copies will be destroyed securely whilst the digital files will be securely deleted from the university's computer system.

Anonymity and Confidentiality

The researcher will take every precaution to ensure that any identifying information about you will not be revealed when the research findings are reported or published. Specifically, pseudonyms and/or codes will be assigned to participants and schools.

All the data and findings related to this study will be mainly used for the fulfillment of a PhD thesis at the University of Auckland. The researcher may also use them for publications and/or presentation in conferences. Any identifying information related to your school or teachers will not be revealed in the findings. I will be pleased to provide you with a summary of the research findings if you would like this.

Thanks for your time to read this information sheet and help in making this study possible. I look forward to your response.

Regards,
Zhuoni (Annie) Cai

University of Auckland Contacts:

Researcher	Supervisor	Co-Supervisor & Head of School
Zhuoni Cai	Associate professor Christine Rubie-Davies	Dr. Louise Keown
PhD Candidate School of Learning, Development and Professional Practice, Faculty of Education, The University of Auckland	School of Learning, Development and Professional Practice, Faculty of Education, The University of Auckland	School of Learning, Development and Professional Practice, Faculty of Education, The University of Auckland
z.cai@auckland.ac.nz	c.rubie@auckland.ac.nz	l.keown@auckland.ac.nz
020 453 0530	(09) 6238899 ext t 82974	(09) 6238899 ex 86435

For ethical concerns contact: The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Private Bag 92019, Auckland, 1142. Telephone 09 373-7599 ext.87830/83761. Email: humanethics@auckland.ac.nz

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 2014 FOR A PERIOD OF THREE YEARS. REFERENCE NUMBER _011600_.

350

CONSENT FORM (Teacher)
THIS CONSENT WILL BE HELD FOR A PERIOD OF SIX YEARS.

Title of Project: Teacher expectations for children with autism spectrum
                               disorder
Research Team: Associate Professor Christine Rubie-Davies (Principal
                               Investigator), Dr. Louise Keown (Co-Investigator) and Ms.
                               Zhuoni Cai (University of Auckland PhD student)

I have read and understood the participant information sheet for this research project. I understand the nature of this research and why I have been selected to participate. I have had an opportunity to ask questions and have them answered. I have been informed that participation in this project is voluntary.

- I agree to participate in study two and study three.
- I agree that I will participate in this research provided it is carried out according to the descriptions in the Participant Information Sheets.
- I agree that the researcher is eligible to survey and interview me and observe one class lesson of mine.
- I agree that students and parents' participation/non-participation in study three not affect students' learning and relationship between them and me.
- I understand that my principal has given an assurance that the relationship between me and my school will not be affected if I want to participate or not participate in this and that my decision will not affect the relationship between the principal and me.
- I understand that I can withdraw approval at any time up to the day before the arranged questionnaires, observation and interviews without explanation.
- I understand that an audio tape will be used in each class observation and interview, and will be transcribed fully after the observation and interview.
- I understand that I have a maximum of two weeks to review the transcripts of the recordings for accuracy after the interview and observation. The researcher will be eligible to analyze and edit the transcripts if the transcripts are not returned in two weeks.
- I understand that any identifying information regarding me will not be presented in the research findings which include the doctoral thesis, research reports or oral presentations.
- I understand that all data collected regarding me will be kept and stored for six years in the University of Auckland and will be destroyed securely after six years.
- I understand that it is highly unlikely that there will be physical or psychological harm for me, but if I have any undesirable feeling I will be given a list of local counseling services.
- I understand that the researcher will provide me with a summary of the research findings if I request this.

- I understand that the research findings will be presented in the doctoral thesis, research reports or presentations and that the researcher may present the findings at the University of Auckland or other conferences.

Name:…………………………

School:

Signed:

Date:

For ethical concerns contact: The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Private Bag 92019, Auckland, 1142. Telephone 09 373-7599 ext.87830/83761. Email: humanethics@auckland.ac.nz

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 2014 FOR A PERIOD OF THREE YEARS. REFERENCE NUMBER _011600_.

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Appendix B

Autism Survey

(Adapted from Stone, 1987)

</div>

*If you would like to complete the survey online, please go to **www.handsinautism.org***

Directions: Please answer the following questions on this survey as best you can. Do not spend too much time on any one question. For each of the following statements, circle the number that best reflects how much you AGREE with each statement.

	Fully Agree	Mostly Agree	Somewhat Agree	Somewhat Disagree	Mostly Disagree	Fully Disagree
1. Autism is an emotional disorder.	1	2	3	4	5	6
2. Early intervention can lead to significant gains in children's social and communication skills.	1	2	3	4	5	6
3. All children with autism display poor eye contact.	1	2	3	4	5	6

4. Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally.	1	2	3	4	5	6
5. Problems with social relatedness that are present in autism are different from social problems seen in other psychiatric conditions.	1	2	3	4	5	6
6. Autism is more frequently diagnosed in males than in females.	1	2	3	4	5	6
7. Children with autism do not show attachments, even to parents/caregivers.	1	2	3	4	5	6
8. Research indicates that sensory integration therapy is an effective treatment for autism and its symptoms.	1	2	3	4	5	6
9. Children with autism are deliberately uncooperative.	1	2	3	4	5	6

10. Most parents/caregivers of children with autism report their first concerns were related to the child's social behaviour.	1	2	3	4	5	6
11. Autism tends to run in families.	1	2	3	4	5	6
12. We now have treatments that can cure autism.	1	2	3	4	5	6
13. Children with autism can grow up to live independently.	1	2	3	4	5	6
14. There is one approach/program that works for all children with autism.	1	2	3	4	5	6
15. It is important that all children diagnosed with autism receive some form of special education services at school.	1	2	3	4	5	6
16. Autism occurs more commonly among higher socioeconomic and educational levels.	1	2	3	4	5	6
17. Autism can be diagnosed as early as 18 months.	1	2	3	4	5	6

355

18. With the proper treatment, most children diagnosed with autism eventually outgrow the disorder.	1	2	3	4	5	6
19. Children with autism do not show affection.	1	2	3	4	5	6
20. The need for routines and sameness is one of the earliest behavioural features of autism.	1	2	3	4	5	6

Please provide the following information:

Age   Gender: Male   Female

What is your role?

General education teacher   Special education teacher

Licensed therapists   Administrator or principal

Other

How many years of experience have you have with children with Autism?

None   <2 years   2-5 years   6-10 years

11-15 years   16-20 years   21-25 years   25+years

Appendix C-1

STUDY TWO: SAMPLES OF TEACHER SURVEYS

RATING SCALE FOR ACHIEVEMENT OF CHILDREN WITH AUTISM SPECTRUM

DISORDER

Name (code):_____   School   (code):_____

Class Level:_____   Sex: Male_____   Female_____

Age: less than 25 _____

26-30 _____

31-35 _____

36-40 _____

41-45 _____

46-50 _____

51-55_____

more than 56 _____

Teaching Experience: 0-5 years_____   6-10 years_____

11-15 years_____   16-20 years_____   more   than 20 years_____

Education Background: Bachelor_____   Master_____PhD

Other _____

Please report each autistic student's current reading achievement and social performance
in your class, according to the indicators provided in the appendix:

Please note: The 10 grades in dimension 1 are in conformity with the 10 positions in the Listening,
Reading and Viewing Framework, from 1 = "Fuel 1", 2 = "Fuel 2" to 9= "Launch iii", 10 = "Level one"

What is the student's current achievement corresponding to his/her reading records?

Class list	Academic achievement -reading																
	Dimension 1										Dimension 2						
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7

Please fill out the questionnaire Autism Social Skills profile as your report about your autistic

student's current social development

Autism Social Skills Profile

Please fill out the demographic information for your autistic student:

Student's Name (code):

Student's Age:

Students' Sex: Male   Female

Student's Ethnicity: European

            Māori

            Asian

            Pacific peoples

              Other

Student's Grade

The following phrases describe skills or behaviors that your student might exhibit during social interactions or in social situations. Please rate HOW OFTEN your student exhibits each skill or behavior independently, without assistance from others (i.e., without reminders, cueing and/or prompting).

Please use the following guidelines to rate your student's behavior:

Circle N if your student never or almost never exhibits the skill or behavior.

Circle S if your student sometimes or occasionally exhibits the skill or behavior.

Circle O if your student often or typically exhibits the skill or behavior.

Circle V if your student very often or always exhibits the skill or behavior.

Please do not skip any items. If you are unsure of an item, please provide your best estimate.

Never	Sometimes	Often	Very often
N	S	O	V

Skill Area	How Often				Brief Description
Invites Peers to Join Him / Her in Activities	N 1	S 2	O 3	V 4	
Joins in Activities With Peers	N 1	S 2	O 3	V 4	
Takes Turns During Games and Activities	N 1	S 2	O 3	V 4	
Maintains Personal Hygiene	N 1	S 2	O 3	V 4	
Interacts With Peers During Unstructured Activities	N 1	S 2	O 3	V 4	
Interacts With Peers During Structured Activities	N 1	S 2	O 3	V 4	
Asks Questions to Request Information About a Person	N 1	S 2	O 3	V 4	
Asks Questions to Request Information About a Topic	N 1	S 2	O 3	V 4	
Engages in One-On-One Social Interactions With Peers	N 1	S 2	O 3	V 4	
Interacts With Groups of Peers	N 1	S 2	O 3	V 4	
Maintains the "Give-and-Take" of Conversations	N 1	S 2	O 3	V 4	
Expresses Sympathy for Others	N 1	S 2	O 3	V 4	
Talks About or Acknowledges the Interests of Others	N 1	S 2	O 3	V 4	

Never	Sometimes	Often	Very often
N	S	O	V

Skill Area	How Often				Brief Description
Recognizes the Facial Expressions of Others	N 1	S 2	O 3	V 4	
Recognizes the Nonverbal Cues, or "Body Language" of Others	N 1	S 2	O 3	V 4	
Requests Assistance From Others	N 1	S 2	O 3	V 4	
Understands the Jokes or Humor of Others	N 1	S 2	O 3	V 4	
Maintains Eye Contact During Conversations	N 1	S 2	O 3	V 4	
Maintains an Appropriate Distance When Interacting With Peers	N 1	S 2	O 3	V 4	
Speaks With an Appropriate Volume in Conversations	N 1	S 2	O 3	V 4	
Considers Multiple Viewpoints	N 1	S 2	O 3	V 4	
Offers Assistance to Others	N 1	S 2	O 3	V 4	
Verbally Expresses How He / She Is Feeling	N 1	S 2	O 3	V 4	
Responds to the Greetings of Others	N 1	S 2	O 3	V 4	
Joins a Conversation With Two or More People Without Interrupting	N 1	S 2	O 3	V 4	
Initiates Greetings With Others	N 1	S 2	O 3	V 4	

Never	Sometimes	Often	Very often
N	S	O	V

Skill Area	How Often				Brief Description
Provides Compliments to Others	N 1	S 2	O 3	V 4	
Introduces Self to Others	N 1	S 2	O 3	V 4	
Politely Asks Others to Move out of His / Her Way	N 1	S 2	O 3	V 4	
Acknowledges the Compliments Directed at Him / Her by Others	N 1	S 2	O 3	V 4	
Allows Peers to Join Him / Her in Activities	N 1	S 2	O 3	V 4	
Responds to the Invitations of Peers to Join Them in Activities	N 1	S 2	O 3	V 4	
Allows Others to Assist Him / Her With Tasks	N 1	S 2	O 3	V 4	
Responds to Questions Directed at Him / Her by Others	N 1	S 2	O 3	V 4	
Experiences Positive Peer Interactions	N 1	S 2	O 3	V 4	
Compromises During Disagreements With Others	N 1	S 2	O 3	V 4	
Responds Slowly in Conversations	N 1	S 2	O 3	V 4	
Changes the Topic of Conversation to Fit Self-Interests	N 1	S 2	O 3	V 4	
Misinterprets the Intentions of Others	N 1	S 2	O 3	V 4	

Never		Sometimes		Often		Very often
N		S		O		V

Skill Area	How Often				Brief Description
Makes Inappropriate Comments	N 1	S 2	O 3	V 4	
Engages in Solitary Interests and Hobbies	N 1	S 2	O 3	V 4	
Ends Conversations Abruptly	N 1	S 2	O 3	V 4	
Fails to Read Cues to Terminate Conversations	N 1	S 2	O 3	V 4	
Exhibits Fear or Anxiety Regarding Social Interactions	N 1	S 2	O 3	V 4	
Experiences Negative Peer Interactions	N 1	S 2	O 3	V 4	
Engages in Socially Inappropriate Behaviors	N 1	S 2	O 3	V 4	
Exhibits Poor Timing With His / Her Social Initiations	N 1	S 2	O 3	V 4	
Is Manipulated by Peers	N 1	S 2	O 3	V 4	
Engages in Solitary Activities in the Presence of Peers	N 1	S 2	O 3	V 4	

Your prediction for your student's one-year achievement

Class list	Academic achievement -reading															
	Dimension 1										Dimension 2					
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7

What do you expect this student to be able to do in reading in one year's time? (Please briefly describe it)

Your prediction for your autistic student's one-year social development:

1. How much do you anticipate that this child will be able to actively maintain social interactions one year from now in comparison with her / his current performance?

1 Decrease greatly   2 Decrease slightly   3 Stay the same 4 Increase slightly 5 Increase greatly

2. How much do you anticipate that this child will be able to demonstrate perspective-taking skills one year from now in comparison with her / his current performance?

1 Decrease greatly 2 Decrease slightly 3 Stay the same 4 Increase slightly 5 Increase greatly

3. How much do you anticipate this child will be able to positively engage in social activities one year from now in comparison with her/his current performance?

1 Decrease greatly   2 Decrease slightly   3 Stay the same 4 Increase slightly 5 Increase greatly

4. How much do you anticipate this child will continue to present socially inappropriate behaviors that could lead directly to negative peer interactions one year from now in comparison with her/his current performance?

1 Decrease greatly 2 Decrease slightly 3 Stay the same 4 Increase slightly 5 Increase greatly

Appendix C-2

Sample of The Indicator of Teacher Report for Children with ASD in Reading

(Current performance)

Please rate the current level of achievement for each child in your Year 5 or Year 6 class in reading, according to the following criteria:

Relative to the curriculum levels provided in the curriculum documents for Year 5 or Year 6, this child's achievement is at the following level:

1. Very much below average (i.e. this child is about half way or less through the work at Level 2 of the curriculum now)

2. Moderately below average (i.e. this child is completing the work at Level 2 of the curriculum now)

3. Just below average (i.e. this child is beginning the work at Level 3 of the curriculum now)

4. Average (i.e. this child has almost completed half the work at Level 3 of the curriculum now)

5. Just above average (i.e. this child has completed half the work at Level 3 of the curriculum now)

6. Moderately above average (i.e. this child has completed the work from the curriculum at Level 3 now)

7. Very much above average (i.e. this child is working at Level 4 of the curriculum now)

Sample of The Indicator of Teacher Prediction for Children with ASD in Reading

(Current performance)

Please rate each child with ASD in your class in reading according to the achievement you expect each child to make during the year s/he is in your class, according to the following criteria:

Relative to the curriculum levels provided in the curriculum documents for Year 5 or/ and 6, I would expect this child to achieve this level by the end of this year:

1. Very much below average (i.e. I would expect this child to be about half way or less through the work at Level 2 of the curriculum one year later)

2. Moderately below average (i.e. I would expect this child to be almost completing the work at Level 2 of the curriculum one year later)

3. Just below average (i.e. I would expect this child to be being the work at Level 3 of the curriculum one year later)

4. Average (i.e. I would expect this child to have almost completed half the work at Level 3 of the curriculum one year later)

5. Just above average (i.e. I would expect this child to have completed half the work at Level 3 of the curriculum one year later)

6. Moderately above average (i.e. I would expect this child to have completed work from the curriculum at Level 3 one year later)

7. Very much above average (i.e. I would expect this child to be working at Level 4 of the curriculum one year later)

Appendix D-1

STUDY THREE: OBSERVATION PROFILE

Teacher (code)   School name (code)
Date

Categories	Recordings of the teacher's verbal behaviours (teacher's interaction with autistic child/children)	Coding (office use only)
Teaching a concept or idea		
Questions related to learning		
Criticism, praise and feedback		
Behaviour management		

interactions		
Procedural interactions		

STUDY THREE: CODING SHEET

Teacher code

Teaching concept			
Orientation	Prior knowledge	Demonstration	Explanation

Learning questions							
open			closed				

Question-Learning							
	Feedback	Question further	Repeat student's answer	Repeat/ rephrase answer	Teacher supplies	Other child	Further explains	Encourage
Correct								
Incorrect								
No response/ not know								

Criticism, Praise and Feedback		
Criticism	Praise	Feedback

Management			
Preventive +	Preventive -	Reactive +	Reactive -

Procedure	
Individual	Group/Class