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Educators' Knowledge and Confidence about Teaching Students with Exceptionalities

Allison E. Horsley, *Western University*

Supervisor: Friesen, Deanna, *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Master of Arts degree in Education

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Abstract

Ontario teachers, who work with students of varying strengths and needs, must address the challenges posed by numerous exceptionalities. This study recruited both elementary and secondary in-service teachers (N= 95) and examined teachers' knowledge and confidence in teaching students with exceptionalities. Findings reveal that teachers feel less confident in teaching students who are deaf/Hard of Hearing and blind/low vision, while they feel most confident in teaching students with learning disabilities and behavioural exceptionalities. Despite self-reported knowledge in behavioural exceptionalities, teachers expressed a need for additional support. Teachers are also more confident in assessing strengths than needs and implementing accommodations over modifications. Teachers feel most assured in supporting skills like writing, reading, organization, and time management, but less so in memory, executive functioning, and fine motor skills. The study underscores key challenges and opportunities for improving teacher training, professional development and enhancing educational outcomes for all students.

Keywords

inclusion, exceptionalities, teachers, knowledge, confidence, ability to teach, experience, barriers, facilitators

Summary for Lay Audience

Ontario teachers work with students with various strengths and needs in their classroom. The *Education Act* states that a student in Ontario can be identified as ‘exceptional’ under one of five categories. The categories of exceptionality are behaviour, communication, intellectual, physical, and multiple. Given the many students with exceptionalities, it is important to identify where teachers lack knowledge so they can be better prepared to work with students’ diverse needs. The present study investigated educators’ knowledge and confidence about teaching students with exceptionalities. Both elementary and secondary in-service teachers participated in this study. 95 teachers completed an online questionnaire that asked about their knowledge, ability to teach, and experience working with students with exceptionalities. Results suggest that teachers are less confident in their abilities to work with students who are deaf/Hard of Hearing and blind/low vision, while they feel most confident in teaching students with learning disabilities and behavioural exceptionalities. Despite reporting high knowledge about students with behavioural exceptionalities, teachers expressed a need for more support when working with these students. Teachers also reported greater confidence in assessing students’ strengths than their needs and in implementing accommodations rather than modifications. They also felt most confident supporting skills related to writing, reading, organization, and time management, but less confident in areas such as memory, executive functioning, and fine motor skills. The findings of this study highlight the challenges that teachers face and the strategies they rely on when teaching students with exceptionalities. By identifying these barriers and facilitators, this research offers valuable insights to improve teacher training programs and professional development. Ultimately, these insights can contribute to enhancing educational outcomes for all students.

Acknowledgments

I would first like to thank my supervisor, Dr. Deanna Friesen, for supporting me on this thesis project. Your guidance, patience, and support have been wonderful, and I look forward to continuing to work with you in the future.

Secondly, I would like to thank the teachers who participated in my research. Your contributions were invaluable, and this thesis would not have been possible without your willingness to share your experiences and insights.

I would also like to thank my friends and family who continue to support me throughout my academic studies. Your laughter, listening ears, and understanding have helped me in more ways than you know. To my parents, thank you for providing me with everything I need to be successful as I continue my studies. To my mom, Nadine, thank you for being my go-to editor at all times of the day and for listening to all my questions and ideas as I plan for my future. I truly would not be able to do any of this without you.

Finally, I would like to thank my fiancé, Mitchell, for always supporting me, no matter how far away I am for school. Your encouragement and understanding mean the world to me. Thank you for always believing in me and for being my constant source of support and motivation. I am endlessly grateful to have you in my life.

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Chapter 1

1 Introduction

It has become increasingly evident that teachers work with students who have diverse needs. Over the past two decades, there has been an increasing emphasis on the importance of including all students in the same classroom (Bas, 2022). As the education system has started to favour inclusion globally, there are less contained classrooms and more students with identified exceptionalities in the regular classroom. Having everyone in the classroom provides better opportunities for learning, and all children can develop a sense of belonging (D'Eloia & Price, 2016; Voltz et al., 2001). These benefits have prompted governments to develop specific legislation and policies to protect the rights of people who have disabilities in society, but more specifically, with the right to access and participate in education (Wray et al., 2022). Although there has been empirical support for the effectiveness of inclusive practice, a key to successful implementation relies on the effectiveness of the teacher (Bas, 2022).

Within a classroom setting, many students may have an identified exceptionality. In the 2015-2016 academic year, approximately nine percent of the students in Ontario were identified as exceptional by an Identification, Placement and Review Committee (IPRC) according to the Learning Disabilities Association of Ontario (2018). Additionally, the 2019 Education Annual Report on Ontario's publicly funded schools reported that an average of 17% of elementary school students and 27% of secondary students receive special education supports (People for Education, 2019). In 2004, Bunch and Valeo reported that of those students who have been identified with an exceptionality, 80% spent more than half of their day within a regular classroom setting. With the increase in inclusive practices, it stands to reason that these numbers have increased in the last twenty years. Understanding teachers' knowledge of educating students with different exceptionalities is crucial for addressing gaps in professional development. Increasing teachers' knowledge can directly impact the education that all students are getting in the class. Therefore, it is imperative to know which exceptionalities teachers are most

knowledgeable about, and which learning needs that they tend to struggle to support, so that they can learn how to better meet the needs of all students.

1.1 The Value of Inclusive Education

Inclusive education is the framework currently used by Canadian educators (Stegemann & Jaciw, 2018). In particular, it is the provincial Ministries of Education that adopt this framework; from there, school boards and teachers implement inclusive education into the classroom. Despite the progress of including students with exceptionalities into the classroom, it is important to understand that the physical placement of a student in a regular class is only a means to an end. The term inclusion does not refer to a physical space; instead, it refers to a condition or a state of being (Voltz et al., 2001). Inclusion refers to a sense of belonging and has more to do with how teachers embrace individual differences, rather than the location of a student in the classroom. It aims at allowing all students to participate by seeing them as valuable and integral members of the school community (Sirem & Catal, 2023). Successful inclusion means not only developing the academic achievement of all students, but also their social skills (Rodriguez & Garro-Gil, 2015).

Sometimes inclusion is misunderstood as being the placement of students with exceptionalities in the general classroom. However, this is integration; integration occurs where students with exceptionalities must adjust according to the mainstream education system and students are taught in the same spaces as their peers but not with their peers. For example, integration would be having a student work on a separate curriculum with an educational assistant at the back of the classroom. Instead, focus should be placed on the creation of instructional environments that promote educational success for all students and a sense of belonging (Voltz et al., 2001). An example of an inclusive environment would be that the student works on the same learning task but may make different use of available supports or have different learning expectations. Inclusion is equally important for students both with and without exceptionalities because barriers are removed to allow all students to participate in the curriculum and feel equally valued. To create an instructional environment that promotes the educational success of all students, teachers need to have an adequate knowledge of different exceptionalities that may be

present in the classroom. They also need to understand what the various needs of these students are to allow them to be successful in the classroom.

Students with exceptionalities benefit from inclusive education in various ways, such as academic and social success. A study conducted by Downing and Peckham-Hardin (2007) found that students with exceptionalities educated in inclusive settings were happier, more independent, and were more motivated to go to school and participate in class. A main theme was the importance of teaching students how to play and interact with others, including initiating social interactions. Having all students educated in the same classroom fosters these types of interactions and relationships and allows each student to be exposed to the same classroom experiences.

Educators and parents may be concerned about the potential academic impact an inclusive model has on both students with exceptionalities and those without exceptionalities (Kalambouka et al., 2007). However, research suggests that including students with exceptionalities in the regular classroom does not have a negative impact on the academic achievement of the other students (Kalambouka et al., 2007). In particular, Kalambouka et al. (2007) indicated that students who are in an inclusive classroom do not interfere with the students' academic performance regarding their grades and in terms of instructional time. When comparing academic achievement in inclusive education, Farrell et al. (2007) also found no evidence that inclusion negatively impacts overall levels of achievement for students. Instead, socioeconomic status, which is a combination of family income, parental education, and occupational status, was shown to be more influential in determining the overall level of academic success rather than the effect of inclusiveness. Socioeconomic status has a greater ability to predict children's academic success in school over being educated in an inclusive setting (Chung, 2015).

In addition, Kart and Kart (2021) found that students without exceptionalities have socially benefitted from being in inclusive classrooms with students with exceptionalities. The social effects of inclusion include reduction of fear, hostility, prejudice, and discrimination, as well as an increase in tolerance, acceptance, and understanding.

Further, students without exceptionalities have been found to have a reduced fear of differences, an increase in self-esteem, and a sense of belonging when they are educated alongside students with exceptionalities (Kim et al., 2020; Knackstedt, 2022).

Inclusive educational environments offer numerous benefits for all students, not just those with exceptionalities (Knackstedt, 2022; Sirem & Catal, 2023). Specifically, inclusive classrooms incorporate teaching methods that ensure academic success for all students, which promotes belonging and allows students to have multiple means to learn and express their understanding (Knackstedt, 2022). This type of mindset benefits all students because it pushes up against the traditional classrooms that typically teach to the middle, and reimagines an environment where students are celebrated for their differences; thus, learning environments are created to meet the needs of all learners. Inclusive classrooms do not ‘hurt’ students without exceptionalities academically; rather, it will hurt the students with exceptionalities more if they are segregated (Voltz et al., 2001).

The active, meaningful participation of students with exceptionalities in the classroom is a critical element of inclusion. Active participation implies that students are engaged in meaningful ways in the everyday functioning of the classroom. Further, meaningful participation is the notion that all students, whether they have an exceptionality or not, share a sense of belonging in inclusive classrooms (Voltz et al., 2001). Every student should feel welcomed and valued without any limitations (D’Eloia & Price, 2016). Although differences among students exist, the climate of the classroom facilitates the idea that these differences are normal and should be seen as assets, not deficits. In an inclusive classroom, all students are viewed as having something important to contribute. Overall, to make inclusive education work, the focus should be given to the physical environment of the classroom, the instructional strategies used, the classroom management techniques used, and the educational collaboration that occurs among staff (Voltz et al., 2001).

The role and responsibility of the classroom teacher is crucial for the success of students with exceptionalities in an inclusive classroom. For instance, structuring learning environments to promote the inclusion of all learners is an important responsibility for

teachers. The process of including students with exceptionalities is also influenced by teachers' attitudes (Gallego-Ortega & Rodríguez-Fuentes, 2021). For teachers to successfully create inclusive classrooms, it is imperative that they engage in effective strategies that support the needs of all students (Jordan et al., 2009). Research highlights that teachers are among the most influential factors affecting student success, especially with diverse learners (Rivkin et al., 2005). Therefore, the effectiveness of inclusive education for students with various needs depends on the teachers themselves. However, without sufficient training, proper resources, collaboration and support for teachers, inclusive education can be challenging.

Since teachers have different personal and professional experiences, their amount of knowledge about exceptionalities will differ. This variability can be due to differences in pre-service teacher training, and the different professional experiences that teachers have encountered in their own classrooms. Bas (2022) explains that some teachers do not have adequate knowledge of inclusive education, its aims, and its benefits. In particular, special education teachers seem to have more knowledge towards inclusive education compared to other teachers (Sirem & Catal, 2023). Sirem and Catal (2023) conducted a study in Turkey and found that in their context, there were not enough materials and tools related to inclusive education, and that administrations did not give enough support to inclusive education. This is a concern because education can only be inclusive if teachers in the schools acquire the necessary positive beliefs as well as resources. Therefore, the importance of educating teachers and providing support on effective inclusive practice is critical for the successful implementation of inclusive education in schools.

According to Alnasser (2020), a lack of knowledge about exceptionalities from teachers can promote negative attitudes, which stigmatizes students with disabilities. Therefore, some teachers may need more information about disabilities to build a positive attitude towards teaching exceptional students (Clipa et al., 2020). Solis et al. (2019) argue that attitudes are related to knowledge and involve an emotional charge, condition the individual, and determine behaviour based on ideas, beliefs, opinions or perceptions, and emotions that are produced. As stated by Solis et al. (2019) teachers' attitudes impact the quality of instruction that students receive. Although attitudes can be modified, adequate

training is crucial for this change (Solis et al., 2019). Continuous training, especially in the field of responding to diversity, favours not only the improvement of the educational response given to students, but also the expectations about student abilities.

1.2 Categories of Exceptionalities

The *Education Act* states that a student in Ontario can be identified as ‘exceptional’ under one of five categories. The categories of exceptionality are behaviour, communication, intellectual, physical, and multiple (Government of Ontario, 2022). These categories include conditions that affect students’ ability to learn. A behavioural exceptionality is characterized by behaviours (e.g., disrupting the class, difficulty regulating emotions) that affect a student’s academic and social success. These students may be more disruptive in the classroom and may have difficulty responding appropriately to situations in the classroom, which can affect their educational performance. This category also includes difficulties in building or maintaining relationships, excessive fears or anxieties, and compulsive reactions. The communication category includes five conditions: autism spectrum disorder, deaf and Hard of Hearing, language impairment, speech impairment and learning disabilities. The intellectual category includes three conditions: giftedness, mild intellectual disability, and developmental disability. The physical category includes physical disability and blind/low vision. Finally, the *Education Act* identifies a multiple exceptionality category which includes any combination of exceptionalities from the other categories (Government of Ontario, 2022). It is paramount to examine the preparation and perceptions of teachers who work with students who have exceptionalities, to learn how to best support them.

1.3 Factors that Impact Inclusive Education

1.3.1 Teachers’ Attitudes Toward Inclusion

Teachers are responsible for educating students. Therefore, they need to be able to address the different characteristics and learning needs of each individual student in the classroom (Bas, 2022; Sirem & Catal, 2023). Sokal and Sharma (2014) suggest that teachers’ attitudes are a significant determinant of success in inclusive classrooms.

Teachers’ attitudes affect their behaviours, which influences the classroom environment

and students' opportunities for success. Sokal and Sharma (2014) explain that the negative attitudes toward inclusion held by parents, teachers, and administrators are the most significant barriers to successful inclusion. According to Clipa et al. (2020) teachers' attitudes towards inclusive education can differ according to a variety of factors; these factors include teachers' previous experience and seniority, the level of teacher training, the teachers' gender, the teachers' belief about access to education and success in education, the self-efficacy of teachers, class size, time for implementing inclusion, number of educational resources for inclusion and the type of exceptionality. Teachers who have more professional training, more time to implement inclusion, and more resources are likely to have a more positive attitude towards inclusive education (Clipa et al., 2020). On the other hand, teachers who have low self-efficacy and have a large class are more likely to have negative attitudes towards being able to implement inclusive education effectively (Clipa et al., 2020). Therefore, it is important to provide teachers with the circumstances that will lead to positive attitudes towards inclusive education within a school environment.

Although research has indicated that the attitudes of teachers play a significant role in the implementation of inclusive practices, teaching experience may change teachers' attitudes towards inclusive education over time (Sharma et al., 2011; Sharma & Sokal, 2016). In Slovenia, Schmidt and Vrhovnik (2015) found that there may be many differences between more experienced and less experienced teachers. In particular, they found that teachers who indicated that they had more teaching experience had a more negative attitude towards inclusive education. Additionally, Ginevra et al. (2022) found that secondary school teachers had more negative attitudes related to the social acceptability of students with exceptionalities. Malki and Einat (2017) stated that teachers can have a negative attitude towards teaching students with exceptionalities because they feel unprepared for inclusive teaching. Their research to date in Israel has broadly indicated that teachers feel poorly prepared to teach in an inclusive classroom. Schmidt and Vrhovnik (2015) explained that one of the main issues with the implementation of inclusive education is teacher training, because teachers have different professional experiences. Recent studies have emphasized the importance of teacher training that

prepares teachers for inclusion because it better prepares them for working with students with exceptionalities (Schmidt & Vrhovnik, 2015).

Nonetheless, it is unclear whether teachers feel they need more preparation, and if there are certain exceptionalities or learning needs that teachers feel less prepared to support. The key to forming positive attitudes among teachers lies in training them to work with individuals with exceptionalities. Allport et al. (1960) found that emotional and behavioural changes among teachers occurred when information about disabilities was provided (the cognitive component of attitudes), in addition to practice experience (the behavioural component). A more recent study by Ginevra et al. (2022) also found that the type of information that was provided in profiles about students with exceptionalities positively impacted teachers' attitudes towards the students when the descriptions of the students focused on their strengths. They suggested that presenting a positive image of students might encourage teachers to rethink the stereotypes that they have about students with exceptionalities. This could potentially improve teachers' attitudes toward the students' academic performance and social acceptance. Their findings also highlighted the importance of the type of information in shaping teachers' attitudes towards students with disabilities. Their research emphasized the need for careful consideration in how information is presented about students with exceptionalities to teachers and the broader school environment. The information about a student with an exceptionality should aim to cultivate a positive perception that emphasizes strengths, abilities, and potential for participation in school, academic and social activities.

Sharma et al. (2006) conducted a study with 1060 pre-service teachers in Australia, Canada, Hong Kong, and Singapore on attitudes towards inclusion. An important finding was that pre-service teachers had more positive attitudes towards inclusion when they received additional training and had more extensive experiences with people with disabilities. A study conducted by Specht et al. (2015) also found that women tended to report more inclusive beliefs and attitudes while men reported higher self-efficacy on managing behaviour. Further, it was noted that future research should investigate the types of positive and negative experiences pre-service teachers have in teaching students

with exceptionalities to determine how they influenced their beliefs about teaching and their self-efficacy.

A study conducted by Amstad and Müller (2020) also found that teachers who worked with students with challenging behaviours experienced lower overall stress due to adequate school resources such as support by other staff and adequate training, which highlights the importance of why training is crucial to the successful teaching of students with exceptionalities. It also highlights the fact that not every school system has the same amount of support and training compared to others.

Some studies have found that teachers feel more comfortable supporting students with some exceptionalities relative to others. MacFarlane and Woolfson (2013) found that the attitudes towards teaching students with exceptionalities is more supportive for children with sensory or physical disabilities, versus those children with emotional, social, or behavioural disorders. This may be due to the fact that students with moderate behavioural problems fall outside the typical instructional tolerance boundaries of teachers (Cook et al., 2000). Consequently, if teachers feel unprepared to teach diverse students, they can develop negative attitudes towards students with exceptionalities and in their inclusive practice (Clipa et al., 2020; Saloviita, 2015; Stegemann & Jaciw, 2018). To date, there is a lack of literature that has examined teachers' knowledge and confidence in teaching students with different exceptionalities and different needs.

Hastings and Oakford (2003) used the Impact of Inclusion Questionnaire to survey 93 pre-service teachers about their perceptions and attitudes towards students with disabilities. The results highlighted that there were more negative attitudes towards children with emotional and behavioural challenges than those toward children with intellectual disabilities. These results were also similar to the study conducted by MacFarlane and Woolfson (2013), which showed a similar trend. These results are particularly interesting because according to Gilajkani and Sabouri (2017), if teachers can determine their students' abilities, teachers will be able to choose and modify their behaviour accordingly. In both situations, teachers felt less confident in working with those students who had behavioural difficulties. The current research will be able to

address where additional support is needed to decrease negative beliefs towards certain exceptionalities.

Finally, Lifshitz et al. (2004) proposed that many teachers' attitudes towards the inclusion of students with mild physical or sensory needs is positive because they do not need the teacher's help, whereas students who have severe behavioural, intellectual, or physical challenges raise teachers' concerns. If teachers' perceptions and attitudes directly impact outcomes for students with exceptionalities, it is essential to foster positive attitudes towards inclusion among teachers, to help contribute to creating more inclusive and supportive learning environments for all students.

1.3.2 Teacher Efficacy in Inclusive Settings

Efficacy beliefs are an important factor that affects the degree of exerted effort when an individual encounters difficulty (Bandura, 1977). Self-efficacy is defined as the judgement of one own's capabilities to perform or achieve a task; therefore, it affects individuals' feelings, thoughts, and the way they motivate themselves (Bandura, 1977; Zimmerman, 2000). Individuals with greater beliefs about their self-efficacy are more inclined to try more difficult tasks, whereas those who have low self-efficacy beliefs tend to avoid difficult tasks.

Teachers' self-efficacy regarding their ability to work with students with exceptionalities is a critical factor for successful inclusion. According to Bandura (1977), individuals with a greater sense of self-efficacy embrace the control of the events affecting their lives. Teacher self-efficacy is the judgement of a teacher about their ability to perform or achieve a task (Bas, 2022). Teachers with high self-efficacy believe that they can foster all students' learning, regardless of their prior knowledge or ability (Woolfolk Hoy et al., 2006). Bas (2022) proposed that teachers who are highly efficacious are more open to new ideas and are willing to try new methods to better meet the needs of their students; this is seen as a reciprocal relationship. They praise students for their knowledge and spend extra time with struggling students (Ware & Kitsantas, 2007). Therefore, it is evident that there is a connection between the self-efficacy of teachers and academic achievement of students. The existence of this relationship is further supported by

Tschannen-Moran and Barr's (2004) findings that teacher efficacy was significantly and positively related to student achievement.

Teachers with low self-efficacy beliefs are more likely to blame low achievement on lack of intelligence, poor home environments, uncooperative administrators, or other external causes (Brouwers & Tomic, 2001). These teachers have low expectations, give up on struggling students and are more critical when students fail. Therefore, students that are taught by high efficacy teachers learn more and are more motivated than those taught by low efficacy teachers (Bas, 2022). This finding was reported in a study in Pakistan where teachers' high self-efficacy was found to have a significant positive impact on performance of the students (Ghaffar et al., 2019). Additionally, high achievement is consistent with teachers' self-efficacy, and is related to increased efficacy and morale in students (Greco et al., 2018; Kilday et al., 2016). Greco et al. (2018) also found that teachers who have low self-efficacy have a negative impact on students. When engagement decreases in the classroom due to the lack of teachers' self-efficacy, many students feel less engaged and productive in the classroom and find themselves unable to complete classroom tasks.

Gibson and Dembo (1984) proposed that teaching efficacy consists of two components: general teaching and personal teaching. General teaching is the belief of teachers about the ability in general to overcome social and economic factors in their students' lives. Personal teaching efficacy refers to teachers' beliefs in their own ability to support a student (Guskey & Passaro, 1994). It has been argued by Sokal and Sharma (2014) that teaching efficacy is a context-specific construct, and it is different for everyone. For example, a teacher who has high self-efficacy for teaching mathematics may not feel equally as efficacious in teaching English or science. Thus, teaching self-efficacy should be measured in relation to specific teaching tasks in classroom settings (Gibson & Dembo, 1984). For example, Smith (2000) found that even teachers who reported higher efficacy for teaching children with mild learning needs reported lower teacher efficacy when they were asked about teaching children with severe disabilities. Therefore, it is imperative to know what exceptionalities teachers feel more confident in teaching, and

what exceptionalities they tend to struggle with, to learn how to better support them, which will ultimately support the needs of all students.

Kalaian and Freeman (1994) found that self confidence levels had a significant effect upon various aspects of teaching; this is partly because many teachers implicitly assume that self-confidence is a necessary requisite for successful teaching. Therefore, developing confidence in one's ability to teach is important for all teachers. However, efforts to enhance teacher confidence need to consider whether low teacher efficacy is a result of teachers' confidence levels or a sense of worthlessness regarding the impact of their work. Overall, it is evident that teacher self-efficacy is crucial for the successful implementation of inclusive practice (Opoku et al., 2021). When teachers have a greater sense of self-efficacy, they are more likely to increase student engagement and success for all learners, including those with exceptionalities.

1.4 Present Study

The present study examined current educators' experience and knowledge of teaching students with various exceptionalities to address gaps in professional development. It is important to have a better understanding of teachers' abilities to support and educate students with exceptionalities in order to increase support for teachers and ultimately impact student learning. Teachers completed a series of questionnaires examining their knowledge and confidence levels regarding teaching students with exceptionalities, as well as their beliefs about teaching and learning and their own self-efficacy. This study posed the following research questions: *What is teachers' **knowledge, confidence in their ability to teach, and their experience** working with students with exceptionalities in Ontario? What **specific supports** for students with exceptionalities do teachers feel comfortable implementing in the classroom? What **are potential barriers and facilitators** that impact teachers' ability to teach students with exceptionalities?*

It is important to determine where teachers feel that they lack knowledge about exceptionalities in order to equip them with the appropriate skills to work with all students, and to cultivate an inclusive teaching philosophy (Learning Disabilities Association of Ontario, 2018). By determining teachers' gaps in knowledge, the current

study will identify where additional professional development opportunities can be implemented to support teachers. It also gives insight into the different readiness levels of teachers, and it helps to get a sense of the change in landscape in terms of the needs of students who are being educated in our school system. Increasing teachers' knowledge can directly impact the education of all students. Therefore, it is imperative to know when educators feel more confident in teaching, and what needs they struggle with, in order to learn how to best support the needs of all students.

Chapter 2 : Methodology

2 Methodology

2.1 Participants

To achieve an acceptable margin of error (10% with 90% confidence intervals) based on a population size of Ontario teachers who teach full time in elementary and secondary grades (in 2022-2023, it was 126,930), ninety-five current Ontario teachers participated in the study, leading to an 8% margin of error (8%). The average age of participants in the study was 36.4, (SD = 11.9, range: 23-63). There were 74 females and 21 males. On average, the teachers had been teaching for 11.3 years (SD = 10.2). 68 teachers currently work in elementary school, 19 work in secondary school, three teachers work in both settings as itinerant teachers, one currently works in the board as a consultant, and four reported other or alternative education. 75 teachers reported that their highest degree was a Bachelor of Education degree; 17 had a Master's Degree, and three had a Doctoral Degree.

2.2 Materials and Measures

2.2.1 Exceptionalities Questionnaire

The Exceptionalities Questionnaire was developed for use in this study to examine the five categories of exceptionalities, breaking them down into 12 specific types listed in Ontario policy. The term 'Learning Disability' was further divided into reading, writing, and math disabilities to see if participants' ratings differed based on the specific type of learning disability. In total, teachers were asked to rate 15 different exceptionalities. The questionnaire asked teachers' questions about their knowledge, experience, and confidence in their ability to teach students with exceptionalities. Teachers were also asked about their confidence in implementing accommodations and modifications for students with exceptionalities. It was a 20-item questionnaire using six-point Likert scales from strongly disagree (1) to strongly agree (6). The questionnaire also included three open-ended questions that asked teachers why they rated certain exceptionalities higher or lower than the others. As this was a new study, a pilot process was run to refine the

questions that were asked to participants. A few teachers completed the pilot study and gave feedback that the study was manageable to complete. The Exceptionalities Questionnaire examined all the exceptionalities in Ontario individually. The beginning of this questionnaire asked teachers demographic information such as age, gender, and years of teaching experience. These questions were included to characterize the sample so that readers could assess how generalizable the results are to other populations (See Appendix A).

At the end of the Exceptionalities Questionnaire, teachers were given three open-ended questions that asked teachers to elaborate on potential barriers, facilitators, and insights they have gained with working with students with exceptionalities (See Appendix B). These questions were used to better understand specific and unique perspectives from each teacher.

2.3 Procedure

This study received approval from the Research Ethics Board at Western University (See Appendix C for Ethics Approval Letter). Participants for the study were recruited through online advertisements that were posted to social media sites, such as Facebook and Twitter (X). If teachers were interested in completing the study, they had to email the investigator to receive the study link. If it was unknown about a participant's eligibility status about whether they were an Ontario teacher, their name was searched on the publicly available Ontario teacher registry. The study itself was completed online using the Qualtrics platform, and all the information provided remained anonymous. Teachers were given a consent form that disclosed the purpose of the study before completing the entire study (See Appendix D). The participants were also able to withdraw from the study at any time.

After answering a series of demographic questions, teachers were asked to complete the Exceptionalities Questionnaire and the open-ended questions. The participants then completed three additional questionnaires that were not used as part of the current study: The Beliefs about Learning and Teaching Questionnaire developed by Glenn (2018), the Teacher Efficacy for Inclusive Practice Questionnaire (TEIP), and the Teaching

Behaviours Questionnaire created by Friesen and Cuning (2018). These questionnaires were included for future research to examine individual differences in responses on the Exceptionalities Questionnaire.

At the end of the study, participants were given a debriefing form that explained the purpose of the study (See Appendix E). For completing the study, participants received a \$20 gift card to the store of their choice: Tim Hortons, Starbucks, or Indigo.

Chapter 3 : Results

3 Results

This chapter outlines the results from data analysis. The term ‘domain’ was referred to throughout the results to signify the questions that were under investigation.

3.1 Inferential Statistics

3.1.1 Knowledge, Experience, and Ability to Teach

A 3 by 15 repeated measures analysis of variance (ANOVA) was run on participants’ agreement ratings for three different domains relevant to working with students with exceptionalities (their knowledge, their experience, and their ability to teach) as a function of 15 different exceptionalities (see Table 1 for the list of exceptionalities). Participants indicated on a 6-point scale whether they agreed with the following statements “I am confident in my *knowledge* about each of the following exceptionalities.” “I am confident in my *ability to teach* students with each of the following exceptionalities.” “I have *experience* working with students who have been identified with each of the following exceptionalities.” Strongly disagree was assigned the value of 1, whereas 6 was strongly agree. Greenhouse-Geiser correction was applied when sphericity was violated.

Table 1 reports the means and standard deviations of educators’ rating of their *knowledge*, *ability to teach*, and *experience* with different exceptionalities. There was no significant main effect of domain, $F(1.5, 140.36) = 2.74, p = 0.08, np^2 = .029$. There was a significant main effect of exceptionality type, $F(7.3, 680.47) = 31.43, p < .001, np^2 = 0.253$, however, it was qualified by a significant interaction effect between the domain and the type of exceptionality, $F(14.05, 1306.69) = 8.60, p < .001, np^2 = 0.086$. Simple main effects analyses were conducted both within the domains to understand whether there were differences in how teachers perceived each exceptionality relative to each other (e.g., reporting different levels of experience), and also within each exceptionality (e.g., understanding if teachers endorsed experience with an exceptionality that

outweighed their confidence to teach students with that exceptionality). First, differences within each domain are reported followed by within each exceptionality.

Table 1. Descriptive Statistics (Mean and Standard Deviations) of Educators' Knowledge, Ability to Teach, and Experience with Teaching Students with Exceptionalities

Exceptionality	Knowledge <i>M (SD)</i>	Ability to Teach <i>M (SD)</i>	Experience <i>M (SD)</i>
Behavioural	4.69 (1.1)	4.71 (1.1)	5.23 (1.1)
Autism	4.58 (1.2)	4.44 (1.1)	5.20 (1.0)
Deaf/Hard of Hearing	3.71 (1.4)	3.74 (1.3)	3.51 (1.8)
Language Impairment	4.05 (1.3)	4.25 (1.1)	4.48 (1.5)
Speech Impairment	3.91 (1.3)	4.38 (1.1)	4.28 (1.5)
Learning Disability	4.88 (1.0)	4.82 (1.0)	5.20 (0.9)
Reading Disability	4.65 (1.1)	4.61 (1.1)	4.84 (1.2)
Writing Disability	4.53 (1.2)	4.58 (1.0)	4.78 (1.3)
Math Disability	4.31 (1.3)	4.31 (1.3)	4.25 (1.6)
Gifted	4.40 (1.2)	4.44 (1.2)	4.32 (1.7)
Mild Intellectual Disability	4.62 (1.1)	4.60 (1.1)	4.78 (1.4)
Developmental Disability	4.31 (1.2)	4.32 (1.1)	4.55 (1.5)
Physical Disability	4.23 (1.2)	4.46 (1.2)	4.11 (1.7)
Blind/Low Vision	3.38 (1.3)	3.33 (1.2)	2.83 (1.7)
Multiple Exceptionalities	4.08 (1.3)	4.15 (1.2)	4.47 (1.5)

Note. $N = 95$, $M = \text{Mean}$, $SD = \text{Standard Deviation}$

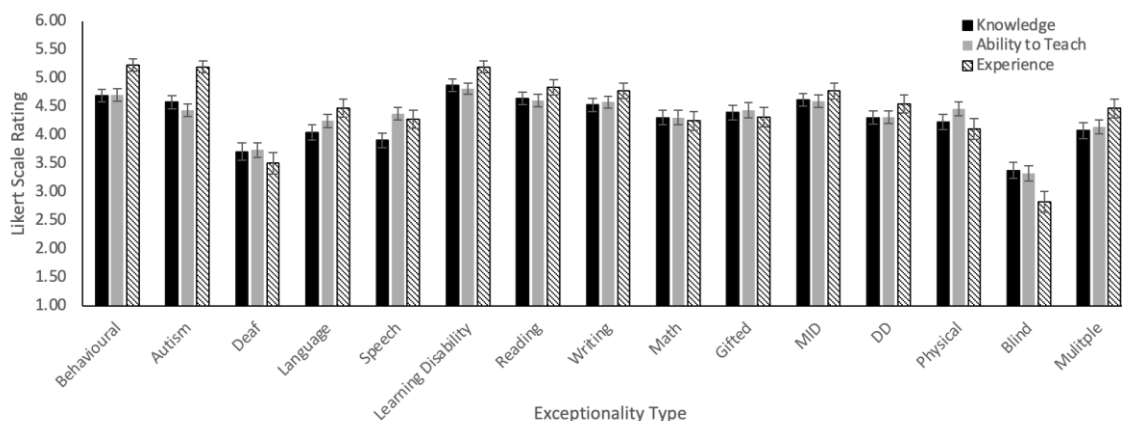


Figure 1. Teachers' Rating of Knowledge, Ability to Teach, and Experience Based on Exceptionality Type with Means and Standard Error.

Figure 1 displays educators' rating of their *knowledge*, *ability to teach*, and their *experience* working with students based on their exceptionality type.

For the domain of *knowledge*, there was a significant main effect of exceptionality type, $F(7.9, 731.3) = 19.45, p < .001, np^2 = 0.173$. Pairwise comparisons with Bonferroni correction revealed that teachers reported the lowest knowledge of students with sensory conditions (blind/low vision and deaf/Hard of Hearing). That is, knowledge of students who are blind/low vision was rated significantly lower than all other exceptionalities, $ps < .01$, except for deaf/Hard of Hearing, $p = 0.874$. The rating for students who are deaf/Hard of Hearing was significantly lower than all the other exceptionalities, all $ps < .05$, except for the following exceptionalities: language, $p = 0.579$, speech, $p = 1.0$, math, $p = 0.118$, physical, $p = 0.103$, and blind/low vision, $p = 0.874$. In contrast, teachers reported having the most knowledge of students with a learning disability and those who have a behavioural exceptionality. Learning disabilities and behavioural exceptionalities did not differ from each other. Surprisingly, although teachers rated themselves higher on their knowledge of students with a learning disability, they rated themselves significantly lower on knowledge of students with specific language, speech, math or writing difficulties relative to the learning disability, all $ps < .01$. In contrast, teachers' ratings of their knowledge of a learning disability did not differ from their understanding of autism, mild intellectual disabilities, reading disabilities, and behavioural exceptionalities, but

differed from the remaining exceptionalities. The exceptionalities that were grouped in the middle (physical, math, developmental and gifted exceptionalities) tended not to differ significantly from the other exceptionalities, all $ps > .05$.

For the domain of *ability to teach*, a repeated measures ANOVA with greenhouse-geiser correction revealed a significant main effect of exceptionality type, $F(7.3, 690.5) = 20.70$, $p < .001$, $np^2 = 0.181$. Pairwise comparisons with Bonferroni correction revealed similar trends in their reported ability to teach as was observed in their knowledge ratings. In this domain, educators expressed the least amount of confidence in their ability to teach students with sensory conditions (blind/low vision and deaf/Hard of Hearing). Ability to teach students who are blind/low vision was rated significantly lower than all other exceptionalities, $ps < .05$, and deaf/Hard of Hearing was rating significantly lower than all other exceptionalities, $ps < .05$ except for math, $p = 0.240$, and multiple exceptionalities, $p = 0.638$. Conversely, teachers exhibited the highest confidence in their ability to teach students with learning disabilities and those with behavioural exceptionalities. Finally, the findings also revealed that teachers' confidence in their ability to teach students who are gifted/and or have autism did not differ significantly from each other; their ability to teach these two exceptionalities only differed significantly from their ability to teach students with sensory conditions (blind/low vision and deaf/Hard of Hearing).

For the domain of *experience* with working with students with exceptionalities, a repeated measures ANOVA with greenhouse-geiser correction revealed a significant main effect of exceptionality type, $F(8.1, 764.8) = 29.92$, $p < .001$, $np^2 = 0.241$. The results highlighted that teachers possessed the least amount of experience working with students who have sensory conditions and those with a physical exceptionality. In particular, experience with students who are deaf/Hard of Hearing was rated significantly lower than all other exceptionalities, $ps < .05$, except for math, $p = 0.175$, and physical disabilities, $p = 0.082$. Experience with students who are blind/low vision was rated significantly lower than all the other exceptionalities $ps < .01$. Experience with students with a physical disability was rated significantly lower than the other exceptionalities, $ps < .05$, except for the following: deaf/Hard of Hearing, $p = 0.082$, language, $p = 1.0$,

speech, $p = 1.0$, math, $p = 1.0$, gifted, $p = 1.0$, developmental, $p = 0.429$, and multiple exceptionalities, $p = 1.0$.

In contrast, teachers have the most extensive experience with students who have autism, learning disabilities, and particularly with students who have a behavioural exceptionality, but their ratings do not significantly differ from each other. That is, their experience rating with working with students with autism is significantly higher than all other exceptionalities, $ps < .01$, except for behavioural exceptionalities, $p = 1.0$, learning disabilities, $p = 1.0$, reading disabilities, $p = 0.347$, writing disabilities, $p = 0.097$, and students with mild intellectual disabilities, $p = 0.227$. The results for writing and reading disabilities are not surprising, given that most teachers reported greater experience working with students who have a learning disability.

Simple main effects analyses were conducted to examine responses within each exceptionality. Several different patterns emerged. Notably, for four exceptionalities (behavioural exceptionalities, autism, learning disabilities and multiple), educators provided a higher rating of their experience than both their knowledge, all $ps < .001$, and ability to teach, all $ps < .001$. However, there was no significant difference between their ratings of ability to teach and knowledge, $p = 1.0$.

In contrast, when rating physical disabilities, teachers rated their ability to teach as higher than their experience, $p = 0.049$, but there were no significant differences between their knowledge and ability to teach, $p = 0.085$, and their knowledge and experience, $p = 1.0$. Further, teachers rated they rated their ability to teach students with a speech impairment as higher than their knowledge, $p < 0.01$, and their experience as higher than their knowledge, $p = 0.03$. There was no significant difference between their ability to teach and their experience, $p = 1.0$. For language impairments, teachers rated their ability to teach as greater than their knowledge, $p = .041$. They also rated their experience as greater than their knowledge, $p = .005$. There was no difference between their ability to teach and their experience with these students, $p = 0.149$. Although teachers reported lower experience with students who are deaf/Hard of Hearing based on their ratings on the questionnaire, there were no significant differences between the domains, all $ps > .40$.

However, for blind/low vision, there was a significant difference between knowledge and experience, $p < 0.01$, and ability to teach and experience, $p = .003$; teachers rated their knowledge and their ability to teach as greater than their experience. There was no significant difference between teachers' knowledge and their ability to teach, $p = 1.0$. Finally, there were six exceptionalities, reading, writing, developmental, math, mild intellectual disabilities and students who are gifted, where the ratings on each domain did not significantly differ from each other, all $ps > 0.15$.

3.1.2 Needs, Strengths, and Leveraging Strengths to Support Needs

A 3 by 15 repeated measures ANOVA was run on participants' agreement ratings for three different domains related to teachers' abilities to assess and leverage characteristics of students with exceptionalities (specifically students' needs, strengths, and teachers' ability to leverage strengths to support needs) as a function of 15 different exceptionalities (see Table 2 for the list of exceptionalities). Participants indicated on a 6-point scale whether they agreed with the following statements: "I am confident in my ability to assess/identify the *needs* of students with each of the following exceptionalities". "I am confident in my ability to assess/identify the *strengths* of students with each of the following exceptionalities". "I am confident in my ability to *leverage strengths to support needs* of students with the following exceptionalities". Strongly disagree was assigned the value of 1, whereas 6 was strongly agree. Greenhouse-Geiser correction was applied when sphericity was violated.

On average, teachers rated their confidence in identifying student characteristics at 4.5 on the Likert scale, indicating a consensus between somewhat agreeing and agreeing. This rating suggest that teachers feel reasonably confident in their capacity to assess students' needs, recognize their strengths, and utilize those strengths to support needs.

Table 2 reports the means and standard deviations of educators' ratings of their ability to assess students' needs, strengths, and to be able to leverage strengths to support needs of students with exceptionalities. There was a significant main effect of domain, $F(2.0, 180.49) = 7.18, p < .01, np^2 = .072$. There was also a significant main effect of

exceptionality type, $F(6.85, 629.77) = 16.61, p < .01, np^2 = .153$. However, there was no significant interaction effect between the domain and the type of exceptionality, $F(14.79, 1360.84), = 1.34, p = .170, np^2 = .014$.

Table 2. Descriptive Statistics (Mean and Standard Deviations) of Educators' Ability to Assess Students' Needs, Strengths, and Leverage Strengths to Support Needs

Exceptionality	Needs <i>M (SD)</i>	Strengths <i>M (SD)</i>	Leveraging Strengths <i>M (SD)</i>	Grand Mean <i>M (SD)</i>
Behavioural	4.52 (1.6)	4.79 (1.1)	4.57 (1.2)	4.63 (1.6)
Autism	4.44 (1.2)	4.63 (1.2)	4.46 (1.2)	4.51 (1.2)
Deaf/Hard of Hearing	3.63 (1.5)	3.95 (1.5)	3.78 (1.4)	3.79 (1.5)
Language Impairment	4.04 (1.3)	4.19 (1.4)	4.26 (1.2)	4.16 (1.3)
Speech Impairment	4.06 (1.2)	4.14 (1.4)	4.17 (1.2)	4.12 (1.3)
Learning Disability	4.59 (1.1)	4.64 (1.1)	4.55 (1.1)	4.59 (1.1)
Reading Disability	4.42 (1.1)	4.60 (1.1)	4.45 (1.2)	4.49 (1.2)
Writing Disability	4.36 (1.1)	4.56 (1.1)	4.45 (1.2)	4.46 (1.1)
Math Disability	4.25 (1.3)	4.38 (1.3)	4.27 (1.3)	4.30 (1.3)
Gifted	4.29 (1.3)	4.54 (1.3)	4.37 (1.4)	4.40 (1.3)
Mild Intellectual Disability	4.33 (1.2)	4.49 (1.2)	4.35 (1.2)	4.39 (1.2)
Developmental Disability	4.07 (1.3)	4.27 (1.2)	4.17 (1.3)	4.17 (1.3)
Physical Disability	4.18 (1.3)	4.41 (1.4)	4.21 (1.4)	4.27 (1.4)
Blind/Low Vision	3.25 (1.3)	3.63(1.5)	3.59 (1.3)	3.49 (1.4)
Multiple Exceptionalities	3.96 (1.4)	4.14(1.3)	4.09 (1.2)	4.06 (1.3)

Note. N = 95, *M* = Mean, *SD* = Standard Deviation

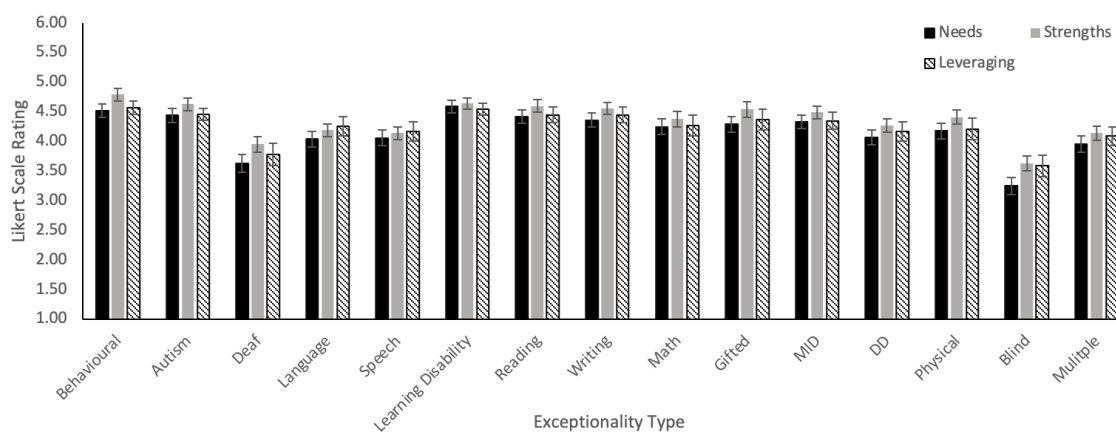


Figure 2. Teachers' Rating of Needs, Strengths, and Leveraging Strengths to Support Needs Based on Exceptionality Type with Means and Standard Error.

Figure 2 displays educators' rating of their ability to assess and identify characteristics of students based on their exceptionality type.

For the main effect of domain, pairwise comparisons with Bonferroni correction revealed that teachers reported a significant greater ability to assess students' strengths than their needs, $p < .001$. However, their ability to assess students' strengths was not statistically different from their ability to leverage strengths to support needs, $p = .126$. Additionally, their ability to assess needs was also not statistically different from their ability to leverage strengths to support needs, $p = .330$.

Further, pairwise comparisons with Bonferroni correction for the main effect of exceptionality type revealed that teachers' agreement differed based on the exceptionality. The grand average was taken to represent teachers' ability to identify and use student characteristics. Teachers reported significantly lower scores for students who are blind/low vision relative to all other exceptionalities, all $ps < .01$, except for deaf/Hard of Hearing, $p = .337$. Likewise, teachers reported their ability to identify student characteristics of students who are deaf/Hard of Hearing as significantly lower than their ability for behavioural exceptionalities, autism, learning disabilities, reading disabilities, writing disabilities, giftedness, mild intellectual disabilities, and physical disabilities, all $ps < .05$; all other comparisons with deaf/Hard of Hearing were not significant, all $ps > .05$.

In addition, teachers reported their ability to identify student characteristics for behavioural exceptionalities as significantly greater than deaf/Hard of Hearing, language impairments, speech impairments, developmental disabilities, blind/low vision, and multiple exceptionalities, all $ps < .01$. In contrast, their rating of ability was not significantly different from all other comparisons, all $ps > .05$. These results highlight that teachers reported the lowest ability to assess and leverage characteristics for students with sensory conditions, and the highest ability for students with behavioural exceptionalities. No significant differences were observed among the various other exceptionalities.

3.1.3 Confidence in Implementing Accommodations and Modifications

A 2 by 15 repeated measures ANOVA was run on participants' agreement ratings for two different domains related to teachers' abilities to confidently implement accommodations and modifications for students with exceptionalities as a function of 15 different exceptionalities (see Table 3 for the list of exceptionalities). Participants indicated on a 6-point scale whether they agreed with the following statements: "I am confident in my ability to implement Individualized Education Plan *accommodations* for students with each of the following exceptionalities". "I am confident in my ability to implement Individualized Education Plan *modifications* for students with each of the following exceptionalities". Strongly disagree was assigned the value of 1, whereas 6 was strongly agree. Greenhouse-Geiser correction was applied when sphericity was violated.

Table 3 reports the means and standard deviations of educators' ratings of their confidence in their ability to implement accommodations and modifications for students with various exceptionalities. There was a significant main effect of domain, $F(1, 90.0) = 8.46, p < .01, \eta^2 = .086$. For the main effect of domain, pairwise comparisons with Bonferroni correction revealed that teachers reported a significant greater confidence in their ability to implement accommodations than modifications, $p < .01$. There was also a significant main effect of exceptionality type, $F(6.89, 619.24) = 9.33, p < .01, \eta^2 = .094$. However, there was no significant interaction effect between the domain

(accommodation and modification) and the type of exceptionality, $F(7.15, 643.64) = 1.20, p = .301, \eta^2 = .013$.

Table 3. Descriptive Statistics (Mean and Standard Deviations) of Educators' Confidence in their Ability to Implement Accommodations and Modifications for Students with Exceptionalities

Exceptionality	Accommodations <i>M (SD)</i>	<i>Modifications</i> <i>M (SD)</i>	Grand Mean <i>M (SD)</i>
Behavioural	5.00 (1.1)	4.66 (1.3)	4.83 (1.2)
Autism	4.89 (1.1)	4.65 (1.2)	4.77 (1.2)
Deaf/Hard of Hearing	4.37 (1.4)	4.27 (1.4)	4.32 (1.4)
Language Impairment	4.68 (1.2)	4.53 (1.3)	4.61 (1.3)
Speech Impairment	4.67 (1.2)	4.53 (1.3)	4.60 (1.3)
Learning Disability	5.05 (0.9)	4.69 (1.2)	4.87 (1.1)
Reading Disability	4.87 (1.1)	4.72 (1.2)	4.80 (1.2)
Writing Disability	4.96 (1.0)	4.75 (1.1)	4.86 (1.1)
Math Disability	4.69 (1.3)	4.48 (1.4)	4.59 (1.4)
Gifted	4.83 (1.2)	4.53 (1.4)	4.68 (1.3)
Mild Intellectual Disability	4.76 (1.1)	4.53 (1.2)	4.65 (1.2)
Developmental Disability	4.64 (1.2)	4.38 (1.4)	4.51 (1.3)
Physical Disability	4.78 (1.2)	4.52 (1.4)	4.65 (1.3)
Blind/Low Vision	4.21 (1.3)	3.97 (1.4)	4.09 (1.4)
Multiple Exceptionalities	4.57 (1.2)	4.37 (1.3)	4.47 (1.3)

Note. N = 95, *M* = Mean, *SD* = Standard Deviation

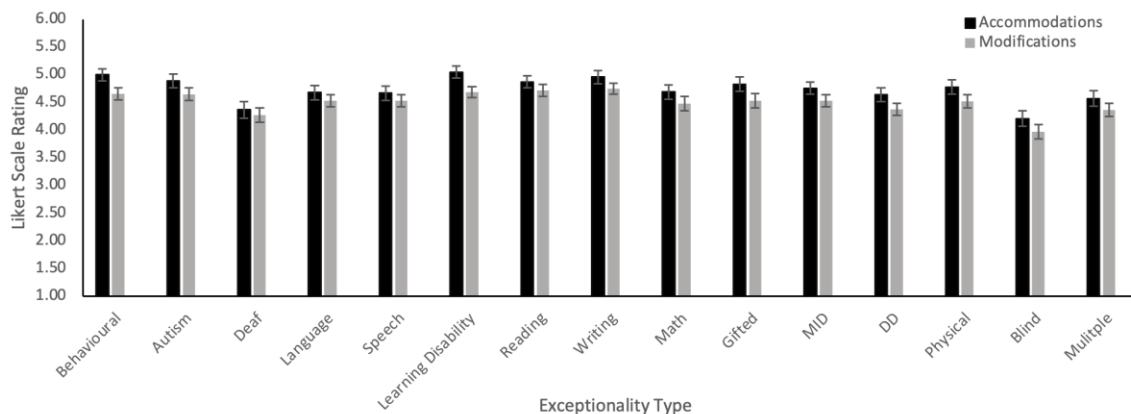


Figure 3. Teachers’ Rating of their Confidence in their Ability to Implement Accommodations and Modifications Based on Exceptionality Type with Means and Standard Error.

Figure 3 displays educators’ rating of their ability to implement accommodations and modifications based on their exceptionality type. Pairwise comparisons with Bonferroni correction for the main effect of exceptionality type revealed that teachers rated their ability to implement accommodations and modifications for behavioural exceptionalities as greater than their rating for students who are deaf/Hard of Hearing, blind/low vision and those who have multiple exceptionalities, all $ps < .01$. Further, teachers rated their confidence in their ability to implement accommodations and modifications for students with learning disabilities as greater than their rating for deaf/Hard of Hearing, speech, developmental disabilities, blind/low vision, and multiple exceptionalities, all $ps < .05$. Teachers also rated reading and writing disabilities as higher than their rating for deaf/Hard of Hearing, blind/low vision, and multiple exceptionalities, all $ps < .05$.

3.1.4 Confidence in the Ability to Teach and Implement Strategies for Various Needs

A 2 by 15 repeated measures ANOVA was run on participants’ agreement ratings for two different domains related to teachers’ abilities to teach and implement strategies for students as a function of 15 different needs (see Table 4 for the list of needs). Participants indicated on a 6-point scale whether they agreed with the following statements: “I am confident in my ability to teach students who have the following identified *needs* (i.e.

difficulties). “Right now, I can easily think of *three strategies* to help a student with the following needs learn.” The first domain was classified as the global ability to teach students with the identified need, and the second domain was considered local strategies to support students who present with the specified need. Strongly disagree was assigned the value of 1, whereas 6 was strongly agree. Greenhouse-Geiser correction was applied when sphericity was violated.

Generally speaking, participants gave ratings in the somewhat agree to agree categories (4 or 5 on the Likert scale). Table 4 reports the means and standard deviations of educators’ ratings of their confidence in their abilities to teach and implement strategies for students with various needs. There was no significant main effect of domain, $F < 1$. There was a significant main effect of skills/needs, which meant that the rating of the type of skill/need varied depending on the type of need in question, $F(8.32, 765.76) = 5.89, p < .01, np^2 = .060$. However, it was qualified by a significant interaction effect between the domain and the type of skill, $F(9.53, 876.80) = 2.68 p < .01, np^2 = .028$.

For the main effect of skill, the needs that teachers felt they could most strongly support were writing, reading, organization, and time management. In contrast, the needs that teachers felt the least confident in supporting were memory needs, executive functioning, and fine motor skills. The rest of the needs (math, attention, problem solving, emotional regulation, comprehension skills, transition skills, and social skills) were in the middle of teachers’ confidence levels.

Specifically, the results highlighted that teachers’ rating of skills/needs differed significantly based on the type of skill/need in question. In particular, teachers’ ratings of writing were significantly greater than memory, executive functioning, anger/frustration management, fine motor skills and comprehension skills, all $ps < .05$. Further, teachers’ rating of organization was also significantly greater than their rating for memory, problem solving, executive functioning, fine motor skills and comprehension skills, all $ps < .05$. Time management was also rated significantly greater than memory, executive functioning, and fine motor skills, all $ps < .05$. Finally, teachers’ rating of reading was also significantly greater than their rating of fine motor skills, $p < .05$.

Simple main effects analyses were conducted to examine responses within each specific need. Overall, there was good agreement across both questions (teachers' ability to teach versus specific strategies). However, there was a significant difference in teachers' ratings for memory needs and anger/frustration management needs. Teachers provided a higher rating of being able to implement strategies than their actual ability to teach students with memory needs, $p < .05$. Further, teachers also provided a higher rating of their ability to implement strategies to support students with anger/frustration management than their ability to teach students with these needs, $p < .05$. There were no other significant differences between the domain (ability to teach versus strategies) and the particular need, all $ps > .05$.

Table 4. Descriptive Statistics (Mean and Standard Deviations) of Educators' Confidence in their Ability to Teach and Implement Strategies for Specific Needs

Need	Ability to Teach Needs <i>M (SD)</i>	<i>Strategies for Needs</i> <i>M (SD)</i>	Overall <i>M (SD)</i>
Memory	4.48 (1.2)	4.74 (1.1)	4.61 (1.2)
Writing	5.00 (0.9)	4.95 (1.1)	4.98 (1.0)
Reading	4.86 (1.0)	4.89 (1.0)	4.88 (1.0)
Math	4.67 (1.3)	4.75 (1.3)	4.71 (1.3)
Attention	4.72 (1.1)	4.83 (1.0)	4.78 (1.1)
Problem Solving	4.71 (1.0)	4.71 (1.2)	4.71 (1.1)
Organization	5.01 (0.9)	5.05 (0.9)	5.03 (0.9)
Time Management	4.94 (0.8)	5.00 (0.9)	4.97 (0.9)
Executive Functioning	4.58 (1.2)	4.52 (1.2)	4.55 (1.2)
Anger/Frustration Management	4.55 (1.1)	4.80 (1.1)	4.68 (1.1)
Emotional Regulation	4.71 (1.2)	4.82 (1.2)	4.77 (1.2)
Fine Motor Skills	4.55 (1.2)	4.52 (1.3)	4.54 (1.3)
Comprehension Skills	4.67 (1.0)	4.69 (1.1)	4.68 (1.1)
Transition Skills	4.77 (1.1)	4.69 (1.2)	4.73 (1.2)
Social Skills	4.87 (1.1)	4.73 (1.2)	4.80 (1.2)

Note. N = 95, *M* = Mean, *SD* = Standard Deviation

3.2 Qualitative Data

3.2.1 Ability to Identify Strengths, Needs and Leverage Strengths to Support Needs

As part of the Exceptionalities Questionnaire, in-service teachers were asked three open-ended questions about their confidence in their ability to assess/identify the *strengths* of students with exceptionalities, the *needs* of students with exceptionalities, and their ability to *leverage strengths to support the needs* of students with exceptionalities. When asked about why the exceptionalities they ranked the highest differed from the ones they ranked the lowest, they clarified that they ranked higher those exceptionalities they had more experience with, while ranking lower those they had less experience with. The teachers reported the most experience with students exhibiting behavioral exceptionalities, autism, and learning disabilities, whereas they indicated the least exposure to students who are deaf or hard of hearing, as well as those who are blind or have low vision.

3.2.2 Barriers, Facilitators, and Insights into Working with Students with Exceptionalities

Teachers were also asked the following three open-ended questions: “What do you see as *potential barriers* to your ability to teach students with exceptionalities?” “What do you see as *potential facilitators* to your ability to teach students with exceptionalities?” “What *insights* have you gained about yourself and your teaching from working with students with exceptionalities?” The responses to these questions underwent thematic analysis to identify various barriers and facilitators that impact teachers’ ability to educate students with exceptionalities, as well as any insights that they have gained from working with students with exceptionalities. To analyze the participants’ open-ended responses, the statements were reread, and specific codes were created based on the topics discussed by teachers. Similar codes, such as those related to teachers mentioning receiving support from different people, were then combined.

In the questionnaire, teachers were asked the following question: “What do you see as *potential barriers* to your ability to teach students with exceptionalities?” The following

is a list of barriers that emerged from participants' responses to their ability to teach students with exceptionalities: large class sizes, lack of adequate support, lack of and insufficient professional development/training, lack of knowledge and experience, limited time for one-on-one interaction with students and planning for differentiated learning, scarcity of resources, high prevalence of exceptionalities/needs in each class, ineffective communication with other teachers regarding student strategies, parental stigma towards implementing Individualized Education Programs (IEPs), inadequate availability of data/assessment for guiding teaching, teacher burnout, current climate in schools, personal areas of weakness, absence of courses in teacher training programs addressing exceptionalities, lack of parental support and understanding, decreased student engagement, limited access to professional referrals, challenges in second language learning, limited student knowledge about exceptionalities, curriculum demands, teaching in a split classroom, and the minimal capacity to implement modifications in high school settings.

Table 5. Barriers to Educators' Ability to Teach Students with Exceptionalities

Barriers	Teachers who Mentioned the Barrier (N)
Not enough time to work one on one with students	34
Lack of professional development or training	33
Lack of adequate support	32
Lack of knowledge and experience	22
Lack of resources	21
Large class sizes	18
Lack of parental support and parent stigma towards IEP support	5
Lack of courses in Teacher's College about students with exceptionalities	4
Too many different needs in one class	2
Poor communication with other teachers	2
Second Language Learning	2
Teaching in a split classroom	2
Lack of modifications in high school settings	2
Student Engagement	2
Personal areas of weakness	1
Teacher burnout	1
Lack of data/assessment available to guide teaching	1
Current climate in schools	1
Limited access to professional referrals	1
Changing grades and schools frequently	1
Lack of student knowledge about exceptionalities	1
Curriculum demands	1

Overall, the most frequently cited barriers to teachers' ability to effectively teach and support students in the classroom included a lack of experience, resources, support, and insufficient time. Out of the 95 participants, 22 teachers mentioned that they felt they had a lack of knowledge and experience working with students with exceptionalities, which has affected their ability to teach these students. Participant 80 (P80) indicated that “one of the biggest barriers that I run into is lack of confidence, which I believe comes from lack of experience and knowledge. A lot of the time we are thrown into situations that we have to figure out along the way, and it can be stressful.” With respect to a lack of resources and support, 33 participants indicated that they felt there were not enough resources and support in the classroom and school in general to support students with exceptionalities. P9 mentioned that “working at a low-income school, often times resources and materials that would facilitate learning are not available.” The lack of educational assistants (EAs) was also a very prominent barrier mentioned in the responses. P19 explained that “one barrier for my ability to teach students with exceptionalities is the lack of support from EAs depending on the school. Some students clearly need a dedicated EA and are not receiving one due to the high cost of supplying and EA for one student.”

Regarding professional development, 33 teachers expressed a lack of adequate experience in this area. P62 commented, “training that does exist is ineffective. It is done in a PD Day, via a ‘slideshow’. Our already large workloads and other duties (i.e. coaching, lack of prep time, etc.) get in the way.” Additionally, P87 remarked, “I think some of the potential barriers are school boards limited resources in funding professional development on topics related to exceptionalities and lack of awareness of such topics within the teacher education programs. This is a systemic issue and implicates the way I teach and provide the best for my students.”

Another significant barrier commonly cited in participants' responses was the lack of time available to develop instructional materials and assessments for students, as well as insufficient time for one-on-one or small group interactions. Thirty-four out of 95 participants expressed the feeling that they do not have adequate time to effectively teach students with exceptionalities. P10 said, “the time needed to give students specialized

instructions and care is minimal.” P20 also said, “I often find it difficult to get to teaching students of differing learning abilities as there is just simply not enough time nor resources.” Many teachers who felt that time was a barrier to their ability to teach also felt that class size was affecting the amount of time they could spend supporting individual students. Sixteen teachers said that the sizes of their classes are too big and hinder their ability to support individual students with exceptionalities. P17 highlighted that “class sizes limit the amount of time and energy into helping the diversity of needs in the room.”

Further, P65 emphasized, “I am one adult who is often in a classroom with 28-30 students alone. There is only so much that one teacher can do and only a certain amount of time I can do it. It’s not easy!” P95 stated that “the ratio of student to teacher in the classroom makes it increasingly difficult to ensure that all student needs are being met”. Finally, P24 commented, “there are too many needs within a classroom and not enough time/resources/understanding to support them. It is very hard to do an exceptional job as an educator versus just keeping your head above water.”

Additionally, numerous teachers identified time constraints, lack of resources, and inadequate professional development as significant barriers impacting their teaching abilities. P66 mentioned that “often students with exceptionalities that are not regulated require more time and energy to help them develop strategies to manage classroom expectations. Depending on the class, this can be time consuming and not always possible. Having resources or access to resources that can be modified and look grade level but are accommodated/modified is also challenging at times. Also battling fixed mindsets is a barrier. When they feel like they can’t, working to show them they can takes time a lot of time and energy.”

Further, P72 explained that “the overall education system has so many demands on it, which often means that individual needs of students cannot be properly supported. The demands of a typical classroom require you to be an expert at many things and to be able to do multiple different things at the same time. That is an unreasonable expectation. When a student is dysregulated, sometimes what is required to support the

student falls outside of the sphere of influence for school. However, schools are expected to support without access to these services. Additionally, teachers are so busy every day that there isn't always enough time to sit and collaborate and learn something new. Finally, the teacher's union is very strong and the accountability for teachers to be at their best is not there.”

In the questionnaire, teachers were also asked the following question: “What do you see as *potential facilitators* to your ability to teach students with exceptionalities?” For this question, there were three participants who did not give a response. The following is a list of facilitators that emerged from participants’ responses to their ability to teach students with exceptionalities. All teachers except for fourteen indicated at least two different facilitators: professional development, increased experience, support from others, extra time, implementation of new teaching strategies, collaboration and learning from other teachers, advocacy for students with exceptionalities, smaller class sizes, contained classrooms for math and language, allocation of board funding, mentoring opportunities with qualified professionals, collaboration with community support agencies, support from parents, engagement with families and third-party organizations, independent research, completion of additional qualification (AQ) courses, integration of technology, passion for continuous learning, efforts to establish rapport with students, resources or training on the background of exceptionalities, supportive administration, organization and seeking assistance when needed, positive behaviour support (PBS) interventions, cultivation of a growth mindset, access to mentorship opportunities, having expert teachers within the school, and ensuring students are placed in appropriate streams or pathways.

Table 6. Facilitators to Educators' Ability to Teach Students with Exceptionalities.

Facilitators	Teachers who Mentioned the Barrier (N)
Support from others (teachers, administration, EAs, parents)	42
Professional development	33
Increased experience	14
More time to plan for working individually with students with exceptionalities	9
Allocation of board funding	7
Resources and training on the background of exceptionalities	7
Smaller class sizes and working in smaller groups	6
Completion of AQ courses	6
Passion for continuous learning	5
Collaboration and learning from other teachers	4
Independent research	4
Integration of technology	4
Implementation of new teaching strategies	2
Advocacy for students with exceptionalities	2
Mentoring opportunities with qualified professionals	2
Positive behaviour support interventions	2
Contained classrooms for math and language	2
Collaboration with community support agencies	1
Engagement with families and third-party organizations	1
Efforts to establish rapport with students	1
Organization and seeking assistance when needed	1
Cultivation of a growth mindset	1
Access to mentorship opportunities	1
Having expert teachers within the school	1
Ensuring students are placed in the appropriate stream/pathway	1

Overall, the most frequently cited facilitator that teachers mentioned was having support in the school. In particular, 42 teachers identified that support from EAs, colleagues, special education resource teams (SERTs), board consultants, peer support, parent support and administrative support help to facilitate their ability to teach students with exceptionalities. For instance, P40 mentioned, “having an EA in the class would help support the students who need that additional support.” P70 mentioned, “having expert teachers in the building and time to meet with them would be amazing. Having strict accountability with regards to what is absolutely required is important. Having enough personnel is important.” P75 also mentioned the need for parent support, school support, and more government funding for school supports: “we need more help in our schools to meet the needs of these students. We are an inclusive board, so we have many different exceptionalities in our classroom.” Finally, P78 emphasized the value of available support when teaching students with exceptionalities, stressing the importance of experience and training to instill confidence in implementing new strategies: “I think having support available when teaching students with exceptionalities is a big help and leaves with a feeling of being supported when you do not know what to do.”

Another commonly cited facilitator mentioned by teachers was professional development and training. Thirty-three teachers specifically highlighted the importance of utilizing professional development and training to support students with exceptionalities. P45 elaborated, stating, “access to PD and learning courses, as well as literacy, reading, and multi-language learner consultants in the schools would be helpful.” Similarly, P78 said, “experience and training with various student exceptionalities is crucial to becoming comfortable teaching and implementing new strategies.” Additionally, P54 noted the increasing availability of professional development sessions on relevant topics and emphasized their value in fostering professional learning through meaningful conversations: “I have noticed that nowadays more PD sessions are becoming available on such topics which seem really beneficial. Those PD sessions allow room for conversation, which is huge for educators because it allows for professional learning overall.”

Further, fourteen educators highlighted their accumulated experience with students with exceptionalities as a significant facilitator. P43 shared, “I think having experience working with different groups of students with exceptionalities has helped me gain some insights and could help me in the future. I have worked in a gifted classroom before, as well as in a tutorial classroom which contained five students each with a different exceptionality (Hard of Hearing, behavioural, etc.). I think the actual classroom experiences working with students with exceptionalities is a large facilitator.” Similarly, P88 identified several factors contributing to their ability to teach students with exceptionalities: “potential facilitators to my ability to teach students with exceptionalities include, my background coming into teaching (my mom was a SERT while I was growing up, learned a lot from her, as well as coaching. I helped many athletes with exceptionalities, and I have taken various courses, specifically my Special Education part 1 & 2), my ability to talk with parents and other support staff so that the student is receiving similar strategies throughout both home and school, and collaboration with support teams to make sure that the student is getting the most they can out of the schooling they are receiving.” Finally, P71 said, “a potential facilitator to my ability to teach students with exceptionalities would be exposure to teaching this type of exceptionality because the more exposure you have, the more you learn about how each student is different and how to assist with their specific exceptionality. Experience is key when it comes to the success in teaching students with exceptionalities. Sitting in class or training and learning about it does no justice to witnessing it firsthand and having to teach those exceptionalities.”

Five teachers emphasized personal growth and a commitment to continuous learning as facilitators in teaching students with exceptionalities. P36 expressed, “I think my passion for ongoing learning will help my ability to teach students with exceptionalities. I genuinely like to get to know each of my students and build a connection which will also help me in my teaching. I think utilizing IEPs and understanding them is key along with getting the support you need.” P49 similarly emphasized their dedication to professional development, stating, “I am always trying to better myself as a professional; I am taking courses, asking questions, and reading various books to bring new ideas into the classroom. Relying on the other teachers in my school is also very helpful.” Additionally,

P51 noted that “changing schools and grades frequently allows me to continually be exposed to different learners and experiences to challenge myself as a teacher.”

In the questionnaire, teachers were then asked the following question: “What *insights* have you gained about yourself and your teaching from working with students with exceptionalities?” Overarching themes discussed were the need to learn more about students with exceptionalities, additional professional development, more experience, individuality of the learner, collaboration, utilizing knowledge in planning and adopting new strategies to addressing diversity.

Professional development was commonly cited by participants as a reoccurring theme. P3 explained, “I can definitely use more professional development on exceptionalities. I have also learned that teaching students with exceptionalities takes a lot of time and patience.” P52 recognized the need for additional professional development to enhance readiness in supporting future students. Further, P9 explained, “I have learned that there is always more to learn. Many exceptionalities are a spectrum; the tools and strategies that work for one student may not work for another. Ensuring I remain educated on strategies and tools for success ultimately makes me more capable to teach students with exceptionalities.” P11 acknowledged, “I have a lot to learn, and the learning never ends. Even if you think you know a lot about a particular exceptionality, every student is unique and needs their own personal plan.” P42 also stressed, “there is no such thing as knowing it all. Each student is different and will present a new challenge you will have to navigate.”

A lack of knowledge was also often cited by teachers. P12 explained that “I need to be retaught everything I learned in university and taught many things I never learned at all.” P23 voiced, “I did not receive enough training and understanding of how to teach students with different exceptionalities”. Moreover, P32 emphasized, “I am a lifelong learner – there is always something new to learn in order to better support our students and their families.”

It was also emphasized how crucial it is to recognize the individuality of each student. P16 pointed out that “every student, even with the same diagnosis, is different and

students may respond to strategies implemented differently. It is important to track (frequency, ABC tracking) to best support goal development.” P38 noted that “teaching students with exceptionalities has taught me the importance of creating safe learning environments, utilizing UDL and diversifying your lessons, and classroom structure. All students are not one size fits all. It has also shown me a sense of awareness and understanding about how people navigate the world differently and may still achieve the same outcomes in the ways that work best for them - using their strengths.”

P34 expressed a desire for more experience with diverse exceptionalities but did not specify which particular ones. P37 shared, “I have learned how different children learn. I have learned that all students can be successful in their learning given the proper supports and accommodations.” Further, P80 underscored the importance of continuous learning, stating, “I think the biggest insight I have is that no one knows everything. Leaning on your colleagues for support and ideas, and to see that they are also going through what you are, really helps build your confidence.” P80 also mentioned the utilization of knowledge in planning, stating that “I have learned that I have to be more aware of the exceptionalities while planning my lessons and to learn from those students as I go.” Lastly, P81 highlighted the necessity for further understanding in differentiating instruction, especially for those with reading disabilities or speech impairments.

Leveraging students’ strengths and needs emerged as another recurring theme. P14 emphasized, “I look at each student as a child with varying abilities. I use this information to inform my teaching (i.e. how I teach, speed, amount). Looking at large classrooms, I consider the needs of the many and the needs of the few, and the needs of the individual. I teach to all, then some, and then model and guide small groups or individuals.” Similarly, P33 articulated, “through working with students with exceptionalities, I have gained the ability and skill to focus on a student’s strengths and needs in order to best support their learning. It has also allowed me to become a more patient and understanding educator.” Echoing this, P35 stressed, “it is important to build on student strengths and work from there.”

Further, P45 shared their observations on their teaching journey, stating, “from when I first started teaching to now, I feel I have seen my teaching grow as I have worked with students with exceptionalities; I noticed I started off by making lessons in a way in which I would have learned from them, but quickly realized that even with multimedia included in lessons, many students need more. I have noticed my teaching has now become much more hands on and involves a lot of choice, as opposed to me ‘running’ the lesson and the students following.” This teacher emphasized the importance of offering diverse pathways to achieve learning goals, remarking, “I have found that it is more successful for me as a teacher and for all my students when there are many different ‘pathways’ in order to achieve the learning goal (ex. work with microscope, work with online gizmo, work with pencil/markers and paper, build using manipulatives - all to help achieve the same outcomes). I have also gained that there will never be a one right way, so for each class, something that worked well before for my students with exceptionalities may not work at all with another class and other students with exceptionalities; it is fully a process of getting to know the student and then implementing a strategy.”

P46 echoed the importance of differentiation, stating, “I have definitely learned that I learn different than every one of my students, and the ways of teaching that worked best for me do not work for all of them. I have had to go home and reflect about what might actually help them learn what they need to. I also have learned that the more ways you can differentiate something being taught to your students the better they will learn and take in the information.” Similarly, P51 said, “I have learned to be flexible. I have also learned that what works for one student, won't work for another student with the same exceptionality. I have learned that I should be incorporating some of the strategies for all my students as they could all benefit.”

P56 emphasized the crucial role of support in assisting students with exceptionalities, alongside differentiated learning: “I have gained many insights about myself and my teaching from working with students with exceptionalities, including the importance of differentiated learning, plus using universal design. However, one of the biggest insights I have gained from working with students with exceptionalities is that it really does take a team effort and is extremely important to have a support system around our students. For

this reason, we as teachers must continue to advocate for all of our students and community as a whole, teaching them and learning from them as well. I am so glad to see how far we have come with certain resources, conversations surrounding exceptionalities, etc. and hope that we continue to break the stigma around it, helping our students succeed whichever way fits them best.” P61 also highlighted that “the best resources are often your other staff members who have experienced working with the student or who have additional training. High expectations must be maintained for all students with exceptionalities.” However, P17 noted a lack of support hindering the ability to best support students: “it is incredibly exhausting trying to keep track of all the different needs and accommodations. With so much going on all the time, it often feels like I’m failing students who need more support, because I don’t have the time or energy to provide the support that they need.”

Further, P77 emphasized the lack of adequate support for students with autism: “I have learned we do not have enough supports for these students outside of school (ABA, IBI) however this is not accessible for everyone. We have three students with autism in our class this year and they are all completely different. I have learned that no two students are the same and what works for one may not work for another. I have learned that trial and error is huge and having parental support along with a supportive administration and great EA's makes a huge difference in success for these children.”

Another theme introduced by participants was experience. P53 emphasized the role of experience in supporting students with exceptionalities, saying, “through my teaching experience, I feel I have learned which students I am more drawn to and therefore able to help with whether it be through shared interests, or past personal experience, regardless, sharing things about yourself as a teacher allows students to be able to grasp at something they find interesting about you and you can then develop relationships. All students want to learn, but some have an easier time expressing their interests than others – it is up to me, to figure out a way to build their confidence so that they can show you in a way that makes them feel good. I think I have done a pretty good job being able to do that.”

P19 also stressed that “students with exceptionalities want to be included and engaged with just as much as other students. I find that there is generally a negative stigma regarding students with exceptionalities in an inclusive classroom/mainstream education classroom as they have higher needs.”

P55 emphasized increased patience and understanding toward students, stating, “I find that I am more patient, I am more understanding of my students’ situations, and I am not as quick to accuse my students of not working if in reality they are struggling (as in, they are not necessarily unmotivated or lazy, they just might not fully understand or they might be experiencing things that prevent them from focusing).” Finally, P90 shared insights gained from working with students with exceptionalities, saying, “working with students with exceptionalities has at times tested my patience, but it has taught me to what end I can be patient up until (and what I need to do for myself after to make sure that I can offer my patience again). I have learned that I love working with students who have exceptionalities. Through my last two years of teaching, I have had multiple students in my class who have exceptionalities and I loved the time that I got to spend teaching them. I have also learned that when you teach one student with Autism Spectrum Disorder (ASD), you have taught one student with ASD. At this point in my career, I have taught four students with ASD in my class, and each of them is different. They respond to different strategies and techniques, their ability to complete work is different and they act differently too.”

Unfortunately, a few teachers expressed a feeling of sense hopelessness and failure in special education. P92 explained, “after ten years of dedication in the Special Education world, I have realized that even being armed with every strategy and theory I can glean from courses, personal reading, and collaboration with other teachers who I admire and would like to emulate, has still left me at a total loss. I know that my skills have improved, and I am seen as a leader at my school in special education, but I can confidently say that I feel like a failure every single day. There are certainly highlights and things I am proud of, but every year in the past decade has presented me with more students with oppositional behaviour and increased severity of behaviour. My school seems to be in constant triage mode which makes it very difficult to be proactive, debrief

violent situations and set clear goals for our most challenging students. ‘Getting through the day’ seems to be the end goal for so many amazing educators. I have heard the line ‘inclusion without support is just abandonment’ and this really rings true to me. I am at a point where I am confident in ‘talking the talk’ about most behaviour strategies. I can pinpoint the function of behaviour in most of my students. The problem is that there is little support in enacting strategies. I am only one person, and it feels like the classroom teacher has so many expectations to consider each individual child’s extensive needs and only a finite time to ensure everything is being done to allow this child to function appropriately in a large group setting. Without full EA support, I have seen some of my students with ASD integrated into mainstream classes and it is heartbreaking to watch them try to self-regulate in a crowded boisterous group.” To add to that, P17 also said, “it is incredibly exhausting trying to keep track of all the different needs and accommodations. With so much going on all the time, I often feel like I’m failing students who need more support, because I don’t have the time or energy to provide the support that they need.”

Chapter 4

4 Discussion

The current study examined educators' knowledge and confidence with working with students with exceptionalities. It is important to have a better understanding of teachers' abilities to support and educate students with exceptionalities as it is likely a necessary precursor to student success. Bandura (1977) explains that for self-efficacy, it is important to know the specific skill that individuals are assessing. However, existing literature often addresses general ability for inclusive education. Therefore, there is a gap in research that focuses on teachers' specific knowledge, confidence and ability to teach students with particular exceptionalities. This study allowed teachers to rate their ability to support students with each exceptionality individually. Knowing which exceptionalities and needs educators feel most uncomfortable addressing in their teaching provides information about where teachers could use additional support. Effective preparation and support are crucial for teachers to build confidence and improve outcomes for students with exceptionalities.

4.1 Specific Exceptionalities

4.1.1 Sensory Conditions (Deaf/Hard of Hearing and Blind/Low Vision)

Regarding the first research question, the results highlighted that the teachers reported the lowest level of *knowledge* about students with sensory conditions (blind/low vision and deaf/Hard of Hearing). This finding is similar to results found in a study conducted by Aguja et al. (2023) who found that teachers perceived their knowledge for students with sensory conditions as not sufficient. The findings also revealed that teachers reported the least amount of confidence in their *ability to teach* students with sensory conditions. Finally, the findings revealed that teachers had the least amount of *experience* working with students who have sensory conditions and those with a physical exceptionality. It is evident that in all three areas (knowledge, ability to teach, and experience), teachers expressed a lack of knowledge and confidence to support students with sensory conditions.

The findings also highlighted that teachers' agreement differed based on the exceptionality when looking at teachers' ability to *assess/identify the needs, strengths, and leverage strengths to support needs* for students with exceptionalities. In particular, teachers reported having the lowest ability to identify students' needs, strengths, and ability to leverage strengths to support needs for students who are blind/low vision and students who are deaf/Hard of Hearing. There are several reasons as to why teachers tend to have less knowledge, experience, and confidence in their ability to teach students who are blind/low vision, and who are deaf/Hard of Hearing. Firstly, the prevalence of students who are blind or Deaf in the general population is relatively low (Mitchell, 2006). This means that teachers, especially those in mainstream educational settings, encounter these students less frequently compared to those with more common exceptionalities such as learning disabilities or behavioural exceptionalities. The smaller portion of students results in limited exposure and experience for most teachers. Secondly, working with students who are blind or Deaf often requires specialized training or knowledge. Many teacher education programs offer limited coursework focused specifically on visual or hearing impairments. Instead, these programs tend to provide more general training, which may not fully equip teachers with the skills needed to support students with sensory conditions (Dogbe & Anku, 2024). Finally, in many educational settings, specialized support roles such as Teachers of the Deaf/Hard of Hearing (TOD/HH) take primary responsibility for these students, and they are also often educated in their own schools. General education teachers might rely heavily on these specialists, which may reduce their direct experience and confidence working with these students (Dogbe & Anku, 2024).

4.1.2 Behavioural Exceptionalities and Learning Disabilities

The results also highlighted that teachers reported having the most *knowledge* of students who have a learning disability and those with a behavioural exceptionality. However, it was interesting to note that although teachers rated their knowledge of learning disabilities in general as high, they still rated their knowledge of students with specific language, speech, math or writing difficulties as significantly lower. These results suggest that while teachers generally feel more confident in their knowledge of learning

disabilities, they may struggle with more specific needs within those categories. Specifically, they may feel less equipped to address difficulties related to language, speech, math and writing impairments compared to their perceptions of learning disabilities, in general. It may also be that when teachers think about a learning disability, they think about how to accommodate the student, but when the skill is emphasized (such as a reading difficulty) teachers start to think more about implementing modifications or interventions. These results also highlight that there may be a discrepancy between teachers' perceived knowledge of learning disabilities in general, and their proficiency with supporting the intricacies of certain learning disabilities. These findings suggest the need for targeted support and professional development to help teachers effectively address the diverse needs of students, specifically those with specific learning challenges (language, speech, math, or writing) within broader categories of exceptionalities.

Further, teachers reported having the most confidence in their *ability to teach* students who have learning disabilities and those with behavioural exceptionalities. These findings are similar to the findings for teachers' *knowledge* of the 12 different exceptionalities. Teachers also reported having the most *experience* with students who have autism, learning disabilities, and students who have a behavioural exceptionality. This consistency between teachers' reported confidence, knowledge, and experience suggests that familiarity with specific exceptionalities enhances their self-efficacy. Teachers feel most capable when they have both the knowledge and practical experience needed to support various exceptionalities effectively. It also highlights the importance of providing teachers with targeted experience and education to improve their confidence in their ability to teach and effectiveness in teaching students with various exceptionalities.

When examining teachers' confidence *in assessing and identifying needs, strengths, and leveraging strengths to support needs*, teachers reported having the highest ability to identify student characteristics for students with behavioural exceptionalities. This could be due to factors such as more familiarity with students with behavioural exceptionalities, training in behaviour techniques, or greater experience in working with students with behavioural exceptionalities.

4.2 Knowledge, Ability to Teach, and Experience Working with Students with Exceptionalities

When examining responses within each exceptionality, it was revealed that for four exceptionalities (behaviour, autism, learning disabilities and multiple) educators provided a higher rating of their experience, compared to their knowledge and ability to teach students with exceptionalities. Although these were among the highest rated of all the exceptionalities, the average ratings were still between 'somewhat agree' and 'agree'. The finding indicates that across these four exceptionalities, although teachers mentioned having more experience with students with behavioural exceptionalities, they still felt less comfortable about their ability to teach and their knowledge about the exceptionality. This gap suggests that while they might be okay with managing behavioural challenges day-to-day, they do not feel fully equipped with the theoretical understanding or specialized strategies that are required to teach these students successfully. This gap suggests a need for more targeted professional development. Teachers may benefit from specialized training that is focused on the specific needs and best teaching strategies for teaching students with behavioural exceptionalities, autism, learning disabilities, and multiple exceptionalities. Further, continuous professional development and ongoing support, such as coaching or mentoring, could also help teachers build their confidence and knowledge over time. Finally, increasing opportunities for practical, hands-on experience with students with exceptionalities during teacher training programs could help to close the gap between theoretical knowledge and practical application. Bassi et al. (2007) emphasize the role of experience in fostering self-efficacy. Their study examined students' self-efficacy in relation to their school experience and found that greater involvement and experience within the school environment correlated with higher levels of self-efficacy.

Similar findings were reported by Alhossein (2016) in Saudi Arabia who explain that teachers reported medium knowledge of behavioural exceptionalities, but low knowledge of interventions to support them. Alhossein (2016) also stated the need for increasing the knowledge of behavioural exceptionalities for pre- and in-service teachers. They felt that teacher education programs should focus on offering courses that allow students the

opportunities to learn new practices and implement strategies with actual students. They also argued that schools and school districts should also have more training sessions to better inform teachers about working with students with behavioural exceptionalities.

Additionally, teachers in the current study rated their ability to teach students with a speech impairment as higher than their knowledge and their experience, and for language impairments, they rated their ability to teach and experience as greater than their knowledge. These findings have several implications; it suggests that educators have gained practical experience through interactions with students with various exceptionalities, which in turn has contributed to their confidence. However, it also raises questions about the adequacy of teachers' formal training and ongoing professional development in effectively teaching students with these exceptionalities. A study conducted by Bannister-Tyrrell et al. (2018) on pre-service teachers' knowledge and perceived competence working with students with exceptionalities highlighted that for universities that provide initial teacher education, it is essential to develop appropriate course content and methodology on inclusive education to further teachers' knowledge of students with exceptionalities. Addressing the gap between perceived experience and actual knowledge and teaching ability could involve targeted training programs, access to resources and support networks, and ongoing professional development focused on enhancing educators' skills and understanding in working with students with diverse exceptionalities.

Further, when rating physical disabilities, teachers rated their ability to teach as higher than their experience. This simply may be due to having a lower number of students in the classroom who have physical disabilities. For blind/low vision, teachers rated their knowledge and their ability to teach as greater than their experience. This could also be because there is typically a lower number of students who are blind/low vision that are educated in the general education classroom. The overall trend across questions (asking teachers about their knowledge, experience, and ability to teach) provides information about the exceptionalities relative to each other and where educators have the strongest backgrounds.

It was interesting to note that teachers had no difference in their ratings of domain (knowledge, experience, or ability to teach) for reading disabilities, writing disabilities, developmental disabilities, math disabilities, mild intellectual disabilities and students who are gifted. While teachers may perceive themselves as equally capable across the three domains for these exceptionalities, their actual effectiveness in addressing and supporting the unique needs of students in each domain could vary. Further research should explore factors contributing to teachers' perceptions of their competency across different areas and how these perceptions align with their actual performance and effectiveness in supporting student learning.

4.3 Needs, Strengths, and Leveraging Strengths to Support Needs

When examining educators' abilities to assess and leverage characteristics of students with exceptionalities (specifically students' needs, strengths, and teachers' ability to leverage strengths to support needs), teachers reported a greater ability to assess students' strengths than their needs. This is a positive outcome, as Wellborn et al. (2012) explain that knowledge of a student's strengths plays a significant role in determining teachers' expectations for students' success. They highlighted that assessments of individuals should always include the identification of strengths, in order to foster more positive expectations and outcomes for success. Additionally, there was a general lack of difference in teachers' ratings between the three categories – identifying strengths, needs, or leveraging strengths to support needs; this is a positive finding as no category was viewed as more challenging than another.

4.4 Implementation of Accommodations and Modifications

The findings also noted that teachers reported a significantly greater confidence in their ability to implement accommodations than modifications. Teachers may have a better understanding or more confidence implementing accommodations since they often involve changes to teaching methods or classroom practices that can benefit all students, not just those with exceptionalities. Implementing modifications may pose greater challenges for teachers, as they require more significant changes to the curriculum and

assessment expectations. Teachers may feel less confident in their ability to modify the curriculum while still ensuring that students meet their learning objectives. Joyce et al. (2020) found that classroom teachers continue to struggle with inclusive education in terms of meeting students differentiated instructional needs, particularly due to a lack of time to modify student work. The difference in confidence between accommodations and modifications suggests that teachers may benefit from additional training and resources specifically focused on modifying the curriculum and adapting instruction to meet the diverse needs of students with exceptionalities. Teachers may also have less experience with implementing modifications since the Ministry of Education documents specify that modifications should only occur after all adaptations have been exhausted.

4.5 Skills and Strategies

Regarding the second research question, the findings revealed that the most strongly related skills that teachers felt they could support (ability to teach needs and confidence in implementing strategies for needs) were writing, reading, organization and time management. However, they felt the least confident with supporting memory needs, executive functioning, and fine motor skills. These findings suggest that professional development or resources might be particularly beneficial if they are focused on helping teachers develop strategies and confidence in supporting memory, executive functioning, and fine motor skills. Keenan et al. (2020) explained that executive functioning skills are critical for students to be able to meet the academic and social demands at school. In a classroom setting, the teacher plays a crucial role in providing support to promote these skills. However, issues with resource limitations may restrict effective implementation of supports and classroom-based interventions. Further, Long et al. (2016) explain that since teachers are often responsible for the implementation of interventions in the classroom setting, developing a better understanding of teachers' awareness and ability to support students' executive functioning skills is needed.

Teachers' concerns about executive functioning (EF) and memory are particularly relevant for students with Attention Deficit Hyperactivity Disorder (ADHD), as these cognitive processes are often impaired. EF includes skills such as working memory, flexible thinking, and self-control, which are crucial for academic success and daily

functioning (Fosco et al., 2020). Students with ADHD often struggle with EF and memory, which can affect their ability to plan, organize, focus, and remember instructions. Teachers' awareness of these issues underscores the need for specific strategies to support these cognitive challenges. Therefore, teacher training programs and professional development opportunities should incorporate strategies for supporting students with EF and memory challenges.

4.6 Barriers, Facilitators, and Insights into Working with Students with Exceptionalities

To investigate the third research question about barriers and facilitators to supporting students with exceptionalities, participant responses from the open-ended questions in the Exceptionalities Questionnaire were analyzed using thematic analysis. When asked about potential barriers in their ability to teach students with exceptionalities, not having enough time to work one on one with students, lack of professional development or training, and a lack of adequate support were most frequently cited. Many teachers expressed that they are put into situations where they must 'figure it out' on their own without adequate support from others, such as administration, EAs, other teachers and parents. Castro et al. (2010) suggest that school leaders, such as administration in the schools, should provide an atmosphere that allows teachers to feel safe when they seek guidance and support.

Many teachers also felt that there were not enough resources and support in the classroom to make inclusive education learning successful. These findings echo similar findings by Thompson et al. (2014) who state that inclusive education can only be successful when there are adequate resources to support it. Many teachers in this study noted the fact that although EA support can be helpful, it is only helpful when there are enough EAs in a particular school. Massouti (2019) conducted a literature review on teacher education for inclusion and found that funding challenges and insufficient resources can hinder the preparation of teachers for inclusive classrooms. Inclusive education requires multiple resources, including materials, instructional and financial support, to address the diverse learning needs of students effectively. Therefore, resolving funding challenges and

ensuring that teachers receive adequate training and support are essential steps in promoting inclusive education and meeting the diverse needs of all students.

The lack of professional development was also commonly noted by participants. The need to have more than just a 'slideshow' during a professional development day is needed. Teachers highlighted school boards' limited resources in funding professional development that relates to exceptionalities, as well as a lack of awareness of such topics within the teacher education programs. Peterson-Ahmad et al. (2018) echo this point and found that pre-service teachers felt the need to have increased professional development on learning disabilities, speech/language impairments, multiple exceptionalities, and students with autism. Anaby et al. (2020) also noted that having access to professional development programs was considered one of the main opportunities to optimize teacher roles. Their study found that teachers require more training or education to have more knowledge on how to work with students with exceptionalities.

The lack of time available to develop instructional materials and insufficient time for one on one or small group interactions was also commonly cited. Participants often mentioned that there is simply not enough time or resources to support all students. They also mentioned the class size being too large to support all students effectively and adequately. A study conducted by Capangpangan et al. (2023) echo these findings and highlight that knowledge and awareness, collaboration and support, communication and recognition, classroom environment and resources, and the use of technology were the different themes and challenges encountered by the teachers in their study.

Some teachers expressed a need for less professional development and more direct assistance from professionals interacting with students. They emphasized the importance of a team approach, particularly for complex students, highlighting the limitations of theoretical advice in addressing real-life challenges such as behavioural issues, mental health struggles and home-life difficulties. Teachers highlighted the need for comprehensive support systems that are tailored to individual students' needs. This need is echoed by Anaby et al. (2020) who stated that the role of the teacher could be improved through in-context professional support, continuing education, teamwork

opportunities extending to partnerships with families and access to resources. In their study, teachers expressed the need for more support provided by specialists such as psychologists, speech therapists, occupational therapists or special educators. The participants in the study often commented on the long wait times and lack of follow-up from a specialist as a barrier to implementing their roles. One teacher shared that the responsibilities should be split between the teachers and the specialist to properly support students with exceptionalities. Finally, Anaby et al.'s (2020) respondents believed that by having more staff work with students in need, they would be able to spend more individualized time to support them and better intervene on an individual basis.

Second language learning was also cited as a barrier to support students with exceptionalities. This finding indicates that in addition to the challenges associated with various exceptionalities, language learning presents an additional obstacle for supporting students with diverse needs, particularly within the context of a French school board. Mady and Muhling (2017) reiterate the point that there is a need for support to making teaching French as a Second Language (FSL) more inclusive of students with exceptionalities. They explain that FSL teachers have indicated a need for increased professional development opportunities to better meet the needs of students with exceptionalities. This insight emphasizes the practical challenges for students with exceptionalities in accessing the support they require in second language contexts.

When the teachers were asked about potential facilitators impacting their ability to teach students with exceptionalities, professional development, increased experience, support from others and extra time were the most commonly cited factors. Many teachers expressed that having support from not only EAs, but other teachers, SERTs, board consultants, parent support and administrative support assisted in their ability to effectively teach students with exceptionalities. Having parental support was also noted by Besnoy et al. (2015) as a key facilitator to supporting students with exceptionalities.

Personal experience was also frequently cited as a facilitator. Many teachers identified several factors contributing to their ability to teach students with exceptionalities, including personal background, coaching experience, and specialized education courses.

They emphasized the importance of effective communication with parents and support staff to ensure consistency in strategies between home and school, as well as collaboration with support teams to optimize students' learning experiences. A study by Ronfeldt et al. (2015) in the United States found that teachers and schools that engaged in collaboration had better achievement in both mathematics and reading. They emphasized the importance of structured, meaningful collaboration among teachers to improve instructional practices and outcomes. The findings suggest that schools should foster collaborative environments to enhance teaching effectiveness and student learning outcomes.

Some teachers also mentioned the benefit of changing grades or schools to continually be exposed to different learners and experiences to challenge themselves as a teacher. This observation is interesting as it underscores how transitioning between schools and grade level exposes educators to a wide array of students with distinct background and abilities. Keiler (2018) explains that teachers who experience varied classroom dynamics are better equipped to adapt their teaching methods. Additionally, teachers encounter varied classroom dynamics, fostering a deeper understanding of student diversity. This new type of exposure can broaden teachers' understanding of student diversity and could equip them with a variety of different instructional strategies tailored to different contexts.

It was interesting to note that many of the barriers that teachers mentioned were also the facilitators. This statement highlights that many of the factors mentioned as barriers by teachers also have the potential to act as facilitators; the same challenges that teachers face can also serve as opportunities for growth or improvement. By acknowledging that barriers can become facilitators with the right approach and support, educators can adopt a more resilient and proactive mindset in addressing the diverse needs of students.

Many teachers reported the need to learn more about students with exceptionalities, additional professional development, more experience, and collaboration. These findings echo the findings that were revealed with the quantitative data. Many also acknowledged that there is always room for growth and improvement in supporting students with exceptionalities. By recognizing the need for additional professional development,

teachers demonstrate a commitment to enhancing their readiness and effectiveness as educators. They underscore the notion that effective teaching requires ongoing professional development and a willingness to adapt strategies to meet the diverse and evolving needs of students. Further, teachers' responses highlighted the fact that even students with the same exceptionality can respond differently to strategies implemented in the classroom. By recognizing and respecting the diverse needs, abilities and perspectives of each student, educators can create learning environments that support the development and success of all learners.

The lack of proper knowledge and training by teachers indicates a gap between the theoretical knowledge provided in their education and the practical skills required to effectively support students with diverse needs. The gap between theoretical and practical knowledge in research has been noted as the theory-practice gap (Blomberg et al., 2013). Blomberg et al. (2013) highlight that teachers' theoretical knowledge typically becomes inert. Therefore, they suggest that pre-service teacher education needs to improve and strengthen the theory and practice connection. Many teachers in the current study expressed a desire for more experience with diverse exceptionalities, indicating a recognition of the value of hands-on experience in gaining a deeper understanding of how to support students with exceptionalities.

Teachers also emphasized the importance of continuous learning and seeking support from colleagues. Teachers recognized that no one knows everything, and by collaborating with others, educators can build their confidence and effectiveness in supporting students with exceptionalities. Teachers also highlighted that other staff members can be valuable resources, especially those with experience or additional training in working with students with exceptionalities. Ni Bhroin and King (2020) also found that teachers' appreciation of collaborating and learning from their colleagues improved their ability to plan for and support learning for students with exceptionalities.

Focusing on students' strengths and needs to support their learning was another theme noted. By recognizing and building upon students' strengths, educators can create a supporting learning environment that fosters success for all students. Each student brings

unique abilities and talents to the learning process, and by building on these strengths, educators can enhance engagement and achievement. Gierczyk and Hornby (2021) echo this point and explain that teachers should place equal emphasis on fostering students' strengths while addressing their needs.

Overall, these insights imply that while there is recognition of the importance of support systems, differentiated learning, and collaboration among educators, there are significant challenges related to insufficient support and resources. This gap can hinder the ability of educators to effectively support students with exceptionalities, despite their best efforts and intentions. Additionally, teachers noted a trend of increasing severity in student behaviours over the years, which can complicate the teaching process. Many teachers felt that without adequate EA support, inclusion can be particularly challenging, especially with students who struggle to self-regulate in mainstream settings. Therefore, while educators are committed and knowledgeable, issues such as insufficient support, increased behavioural challenges, and the limitations of current inclusive education models are leading to significant frustration among educators. Therefore, it is evident that there is a need for more resources, assistance from others, and professional development to better support students with exceptionalities.

4.7 Limitations

The present study has some limitations to consider. Firstly, it should be noted that this study is not representative of the entire population. It solely focused on the knowledge and confidence of 95 Ontario certified teachers in Canada. Therefore, interpretation of the study's results is limited in its generalizability. There was also not an equal number of participants from the elementary and secondary school settings. Future research should incorporate more teachers from secondary schools to determine if there are differences based on grade level taught. Future research could also examine if there are significant differences among teachers' preparedness from different cities and countries to obtain more generalizable results. Secondly, although participants were asked about their attitudes and self-efficacy beliefs towards inclusive education, these questions were not analyzed in this study as they were beyond the scope of the current study. Finally, the

Exceptionalities Questionnaire was written for this study, and although it was piloted on a few teachers to ensure understanding of the questions, it was not a validated measure.

4.8 Recommendations for Future Research

Future research should look at how teachers' knowledge and confidence about teaching students with different exceptionalities are related to their teaching self-efficacy and beliefs about inclusive practice. The present study included questions about teachers' beliefs about teaching and learning, their teaching self-efficacy beliefs, and their beliefs about effective teaching behaviours. Understanding the relationship between teachers' knowledge and confidence in teaching students with exceptionalities and their overall teaching self-efficacy and beliefs about inclusive practice is important for various reasons. Firstly, teachers' self-efficacy regarding their ability to work with students with exceptionalities is a critical factor for success inclusion. Teachers with higher self-efficacy are more likely to implement inclusive practices effectively, which leads to better educational outcomes for students with exceptionalities (Bas, 2022). When teachers have a greater sense of self-efficacy, they are more likely to increase student engagement and success for all learners, including those with exceptionalities (Opoku et al, 2021). Finally, understanding the factors that influence teachers' beliefs about inclusive practice can help promote a more inclusive educational environment. Future studies could use surveys and interviews to help gather detailed data on teachers' beliefs about teaching and learning, their self-efficacy, and their confidence in teaching students with exceptionalities. These tools can help to identify specific areas where teachers feel less prepared.

4.9 Conclusion

In conclusion, the results from this study suggest that teachers are least knowledgeable and capable of teaching students who are deaf/Hard of Hearing and blind/low vision, while they feel the most competent in teaching students with learning disabilities and behavioural exceptionalities. However, despite high self-reported knowledge of students with behavioural exceptionalities, teachers expressed a need for more support when working with these students. The findings also suggest that teachers have the least

amount of experience with students who have sensory and physical exceptionalities, and the most experience with students with autism, learning disabilities, and behavioural exceptionalities. Teachers also reported having greater confidence in assessing students' strengths than their needs and in implementing accommodations rather than modifications. They also felt most confident supporting skills related to writing, reading, organization, and time management, but less confident in areas such as memory, executive functioning, and fine motor skills. The results highlighted key barriers and facilitators to effective teaching of students with exceptionalities, which provides valuable insights to improve teacher training programs, professional development, and overall support and success for students with exceptionalities.

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Appendices

Appendix A: Demographic Information

- 1) What is your age?
- 2) What is your gender?
- 3) What is your ethnicity?
- 4) What is your highest level of education (Bachelor of Education Degree, Bachelor's Degree, Master's degree, Doctoral degree)
- 5) What year did you graduate from your Bachelor of Education program?
- 6) How many years have you been working as a teacher?
- 7) How many years have you taught in an Elementary School (K-8)?
- 8) How many years have you taught in a Secondary School (9-12)?
- 9) What is your current school setting? (elementary, secondary; other:)
- 10) Did you take any courses on inclusive education during your Teacher Education Program?
 - a) If yes, approximately how many hours of instruction have you received?
- 11) Have you taken any professional development in inclusive education?
 - a) If yes, approximately how many hours of instruction have you received?
- 12) Do you have any additional qualifications related to special education? (Check off boxes)
 - a) Special Education Part 1
 - b) Special Education Part 2
 - c) Special Education Specialist
 - d) Reading Part 1
 - e) Reading Part 2
 - f) Reading Specialist
 - g) Special Education for Administrators
 - h) Teaching Students with Communication Needs – Autism Spectrum Disorder
 - i) Other

Rate the following statements from Strongly Disagree to Strongly Agree.

- 1) During my Bachelor of Education degree, I learned about Universal Design for Learning.
- 2) I use Universal Design for Learning principles in my classroom.
- 3) I feel comfortable using Universal Design for Learning in my classroom.
- 4) Universal Design for Learning positively affects the learning outcomes of students in my class.
- 5) Universal Design for Learning Positively affects the social outcomes of students in my class.
- 6) During my Bachelor of Education degree, I learned about Differentiated Instruction.
- 7) I use Differentiated Instruction in my classroom.
- 8) I feel comfortable using Differentiated Instruction in my classroom.
- 9) Differentiated Instruction positively affects the learning outcomes of students in my class.
- 10) Differentiated Instruction positively affects the social outcomes of students in my class.
- 11) I feel confident identifying students' strengths and using them to leverage their needs.

Appendix B: Exceptionalities Questionnaire

For the next section, it is important to know that there are five identified categories of exceptionalities in Ontario. These categories are **Behaviour, Communication, Intellectual, Physical** and **Multiple**. A behavioural exceptionality is characterized by specific behaviours that affect a student's performance. Sometimes Attention Deficit/Hyperactivity Disorder (ADHD) is placed in this category. The communication category includes five conditions: autism spectrum disorder, deaf and hard of hearing, language impairment, speech impairment and learning disability (e.g., reading, math or writing). The intellectual category includes three conditions: giftedness, mild intellectual disability, and developmental disability. The physical category includes physical disability and blind/low vision. The multiple exceptionality category includes any combination of exceptionalities from the other categories.

Rate your knowledge for the following statements from Strongly Disagree (1) to Strongly Agree (6).

1. In general, I am confident in my **knowledge** about exceptionalities.
2. In general, I am confident in my **ability to teach** students with exceptionalities.
3. In general, I have **experience** working with students with exceptionalities.
4. In general, I feel confident in implementing **accommodations** for students with exceptionalities.
5. In general, I feel confident in implementing **modifications** for students with exceptionalities.

(You cannot go back to this page once you click Next)

6. I am confident in **my knowledge** about each of the following exceptionalities:
 - 1) Behavioural Exceptionality
 - 2) Autism
 - 3) Deaf/Hard of Hearing
 - 4) Language Impairment
 - 5) Speech Impairment
 - 6) Learning Disability
 - 7) Reading Disability
 - 8) Writing Disability

- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

7. I am confident in my **ability to teach** students with each of the following exceptionalities:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

8. I have **experience** working with students who have been identified with each of the following exceptionalities:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability

- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

9. I am confident in my ability to assess/identify the **needs** of students with each of the following exceptionalities:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

10. *Please explain why the exceptionalities you ranked the highest differed from the ones you ranked the lowest.*

11. I am confident in my ability to assess/identify the **strengths** of students with each of the following exceptionalities:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability

- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

12. *Please explain why the exceptionalities you ranked the highest differed from the ones you ranked the lowest.*

13. I am confident in my ability to **leverage strengths to support needs** of students with the following exceptionalities:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

14. *Please explain why the exceptionalities you ranked the highest differed from the ones you ranked the lowest.*

15. I am confident in my ability to implement Individualized Education Plan **accommodations** for students with each of the following exceptionalities:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability

- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

16. I am confident in my ability to implement Individualized Education Plan **modifications** for students with each of the following exceptionalities:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

17. I am confident in my **ability to teach** students who have the following identified needs (i.e., difficulties):

- 1) memory
- 2) writing
- 3) reading
- 4) math
- 5) attention
- 6) problem solving
- 7) organization
- 8) time management
- 9) executive functioning
- 10) anger/frustration management
- 11) emotional regulation
- 12) fine motor skills
- 13) listening comprehension skills
- 14) transition skills
- 15) social skills

18. Right now, I can easily think of three strategies to help a student with the following exceptionality learn:

- 1) Behavioural Exceptionality
- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

19. Right now, I can easily think of three strategies to help a student with the following needs to learn:

- 1) memory
- 2) writing
- 3) reading
- 4) math
- 5) attention
- 6) problem solving
- 7) organization
- 8) time management
- 9) executive functioning
- 10) anger/frustration management
- 11) emotional regulation
- 12) fine motor skills
- 13) listening comprehension skills
- 14) transition skills
- 15) social skills

20. I feel like I need additional professional development to increase my knowledge about the following exceptionalities (from Strongly Disagree to Strongly Agree):

- 1) Behavioural Exceptionality

- 2) Autism
- 3) Deaf/Hard of Hearing
- 4) Language Impairment
- 5) Speech Impairment
- 6) Learning Disability
- 7) Reading Disability
- 8) Writing Disability
- 9) Math Disability
- 10) Gifted
- 11) Mild Intellectual Disability
- 12) Developmental Disability
- 13) Physical Disability
- 14) Blind/Low Vision
- 15) Multiple Exceptionalities

Open-Ended Questions

- 1) What do you see as *potential barriers* to your ability to teach students with exceptionalities? Please explain.
- 2) What do you see as *potential facilitators* to your ability to teach students with exceptionalities? Please explain.
- 3) What insights have you gained about yourself and your teaching from working with students with exceptionalities?

Appendix C: Ethics Approval



Date: 6 September 2023

To: Dr. Deanna Friesen

Project ID: 122427

Study Title: Examining Educators' Knowledge of Teaching Students with Exceptionalities.

Application Type: NMREB Initial Application

Review Type: Delegated

Full Board Reporting Date: 06/Oct/2023

Date Approval Issued: 06/Sep/2023 17:18

REB Approval Expiry Date: 06/Sep/2024

Dear Dr. Deanna Friesen

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. **All other required institutional approvals and mandated training must also be obtained prior to the conduct of the study.**

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Updated Study Questions	Online Survey		
Teachers Needed for Study (08:19:2023)	Recruitment Materials		
Debriefing Form (08:19:2023)	Debriefing document		
LOI (08:19:2023)	Implied Consent/Assent		

Documents Acknowledged:

Document Name	Document Type	Document Date	Document Version
Screening Form (08:19:2023)	Screening Form/Questionnaire		

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Ms. Katelyn Harris, Research Ethics Officer on behalf of Dr. Isha DeCoito, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix D: Letter of Information and Consent

Letter of Information and Consent

Project Title: *Educators' Knowledge and Confidence about Teaching Students with Exceptionalities.*

Principal Investigator: Deanna Friesen, Ph.D., Education, Western University

Co-Investigator: Allison Horsley, B.Ed., MA Student, Education, Western University

Invitation to Participate

You are invited to participate in a research study conducted as part of a master's thesis project because you are an Ontario Certified Teacher.

Purpose of Letter

The purpose of this letter is to provide you with information required to make an informed decision about participating in this research.

Purpose of this Study

The purpose of the present study is to examine educators' knowledge of teaching students with exceptionalities in order to address gaps in professional development.

Inclusion Criteria

You are eligible to participate in this study if you are an Ontario Certified Teacher.

Exclusion Criteria

You are not eligible to participate in this study if you are not currently an Ontario Certified Teacher.

Study Procedures

If you agree to participate, you will be assigned a participant number and redirected to an online questionnaire about your knowledge and confidence in working with students with exceptionalities. You will also be asked about your beliefs about students' abilities, your own teaching efficacy, as well as your beliefs about effective teaching behaviours. All participation is electronic, therefore no in-person visits are required. To participate, you will need access to a computer, tablet, or phone device that can connect to the internet. However, we recommend using a computer or a tablet rather than a phone. The time it takes to complete the questionnaire will vary based on each participant, but we estimate that it will take you approximately 45 minutes.

Potential Risks and Harm

There are no known risks associated with participation in this study. However, it should be noted that we cannot guarantee with that information provided via the internet is 100% secure.

Possible Benefits to Participation

Your participation in this study will assist researchers in understanding the knowledge and confidence that teachers have in educating students with exceptionalities. An understanding where teachers could use additional support in the school system enables targeted professional development.

Compensation

For completing this study, you will be offered the option of receiving a \$20 gift card from the vendor of your choice from one of the following: Tim Horton's, Starbucks, or Indigo. Once you have completed the questionnaire, you will be redirected to a secure Qualtrics link to make your choice. You will be asked to input your name and email address. We will provide your name and email address to the company and the gift card will be sent to your email address through the business' online purchasing system. You will receive this compensation within 2 business days of completing the study.

Voluntary Participation

Implied consent is being collected; therefore, you will indicate your consent directly in the survey link. If based on the Letter of Information you decide *not* to participate, you can select "I do not agree to participate" and no information will be collected.

Participation in this study is completely voluntary. While completing the questionnaire, you may withdraw from the study or refuse to answer any of the individual questions at any time. If you decide to withdraw from the study, you may do so at any time by exiting the survey window. However, to be compensated for your participation, you must move through to the end of the study. You may request to have your data removed up to the point when the data has been published.

Confidentiality

The researchers will keep all data in a secure and confidential location for 7 years. The identifiable information (name, email address) will be collected in order to determine eligibility for the study. A master list will be used to link the unique ID with each participant's name, and this list will be stored separately from the study data. All questionnaire data collected will be deidentified and remain accessible to members of the research team on secured servers and will be accessed both onsite at Western and remotely from home. While we will do our best to protect your information, there is no guarantee that we will be able to do so. When the results are published, aggregated data and direct quotes will be incorporated within a thesis or publication but will not be identifiable to you.

The Questionnaire responses will be collected through a secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect all data collected

https://mysurveys.uwo.ca/general_information/qualtrics_security.pdf. The data will then be exported from Qualtrics and securely stored on Western University's server. Representatives of The University of Western Ontario Non-Medical Research

Ethics Board may require access to your study-related records to monitor the conduct of the research.

Open Access Data

Only the anonymized numerical data (multiple-choice responses) will be made accessible by the study investigators to the broader scientific community through an online repository (Open Science Framework: [OSF | Home](#)). The study investigators may re-analyze the anonymized data to gain knowledge and understanding for different research questions.

Contacts for Further Information

If you have any questions or concerns about your rights as a research participant or the ethical conduct of this study, you may contact **The Office of Human Research Ethics**. You may also choose to direct any questions about this research or to address any concerns about your participation to **Dr. Deanna Friesen** at the University of Western Ontario, in London Ontario.

You are encouraged to keep a copy of this letter of information for your records (see recruitment email attachment).

Consent Form

Participants who agree to participate will select the box that states, "I have read the Letter of Information, understand the nature of the study, and I agree to participate" and will be directed to the study's questionnaire for completion.

I have read the Letter of Information, understand the nature of the study, and I agree to participate.

I do NOT agree to participate.

Appendix E: Debriefing Form



Project Title: *Educators' Knowledge and Confidence about Teaching Students with Exceptionalities.*

Principal Investigator: Deanna Friesen, Ph.D., Education, Western University

Co-Investigator: Allison Horsley, B.Ed., MA Student, Education, Western University

Thank you for your participation in our study! Your participation is greatly appreciated.

Purpose of the Study:

We previously informed you that the purpose of the study was to examine educators' knowledge of teaching students with exceptionalities to address gaps in professional development.

With the increase in inclusive practices, it stands to reason that these numbers have increased in the last twenty years. It is crucial to know what knowledge teachers have of educating students with various exceptionalities to address gaps in professional development. Additionally, increasing teachers' knowledge about exceptionalities can directly impact the education that all students get in the class. Therefore, it is imperative to know which exceptionalities teachers are most knowledgeable about, and which learning needs they tend to struggle to support, so that teachers can learn how to better meet the needs of all students.

Final Report:

If you would like to receive a copy of the final report of this study (or a summary of the findings) when it is completed, please feel free to contact us.

Useful Contact Information:

If you have any questions or concerns regarding this study, its purpose or procedures, or if you have a research-related problem, please feel free to contact the researchers Dr. Deanna Friesen or Allison Horsley. If you have other concerns about this study or would like to speak with someone not directly involved in the research study, you may contact The Office of Human Research Ethics.

Curriculum Vitae

Name: Allison Horsley

Post-secondary Education and Degrees:

Laurentian University
Sudbury, Ontario, Canada
2017-2021 B.A. in Psychology, Minor in French and Law

Laurentian University
Sudbury, Ontario, Canada
2017-2022 B.Ed. in Education, French as a Second Language

Western University
London, Ontario, Canada
2022-Present M.A. (*In Progress*), School and Applied Child Psychology

Honours and Awards:

Admissions Scholarship
Laurentian University
2017

Cum Laude
Laurentian University
2021

Magna Cum Laude
Laurentian University
2022

Inclusive Education Award
Western University
2024

Jessica Jean Campbell Coulson Award
Western University
2024

Related Work Experience:

Research Assistant
Western University
2022-Present

Ontario Occasional Teacher
Simcoe County District School Board
2022-Present

Presentations:

Friesen, D., **Horsley, A.**, Gendron, P., Chen, A., Fenesi, B., & King, C. (2024). Pre-Service Teachers' Annotations of Psychoeducational Reports for their Inclusive Practice. [Multipaper Presentation]. Canadian Society for the Study of Education's 52nd Annual Conference, Montréal, Québec, Canada.

Horsley, A., & Friesen, D. (2024). Educators' Knowledge and Confidence about Teaching Students with Exceptionalities. [Multipaper Presentation]. Canadian Society for the Study of Education's 52nd Annual Conference, Montréal, Québec, Canada.