Teachers' Engagement with Individual Education Plans for Secondary Students with Autism

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Abstract

The Individual Education Plan (IEP) is widely considered the main mechanism for guiding individualized instruction and supports for students with disabilities—a right under the United Nations Convention on the Rights of Persons with Disabilities (2004). In Ontario, students with autism are among those believed to benefit from the use of an IEP as it facilitates their inclusion in general education classrooms. This includes secondary-aged students with autism, who have historically received less research attention compared to their younger counterparts. Despite the importance of teachers' role in developing, revising, and implementing IEPs, few studies have investigated how teachers use the IEP in their instructional planning. Therefore, the purpose of this study was to examine how general education teachers engage with IEPs for secondary students with autism in their planning from a variety of angles. Using a multimethod design, this study addressed four research questions: (1) What are general education teachers' perceptions of the IEP for secondary students with autism in inclusive classrooms? (2) How do general education teachers perceive their preparation to implement an IEP for secondary students with autism in inclusive classrooms? (3) What relationships, if any, exist between general education teachers' demographic characteristics (e.g., years of experience), perceptions of the IEP, and preparation to implement it for secondary students with autism in inclusive classrooms? And (4) How do general education teachers use IEPs in their planning to support secondary students with autism in inclusive classrooms? Data were collected in two phases: Phase 1 was quantitative and used a survey, while Phase 2 was qualitative and combined a concurrent think-aloud protocol with semi-structured interviews. Findings revealed which IEP components teachers found most and least relevant to their planning, and their perceived preparation to enact various IEP-related actions and responsibilities. Qualitative analysis led to

the construction of ten themes, which were re-organized into a conceptual model for understanding how teachers engage with IEPs in their planning to support students with autism in inclusive classrooms. Findings from this research contribute to the literature on teachers' engagement with IEPs for students with autism and, more broadly, teacher planning.

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Chapter 1: Introduction

The United Nations (2006) Convention on the Rights of Persons with Disabilities (UNCRPD) calls on States Parties to provide "effective individualized support measures in environments that maximize academic and social development, consistent with the goal of full inclusion" (para. 10) so that all children can learn together in the general education classroom. While terminology varies, an individualized student education plan, hereafter referred to as an Individual Education Plan (IEP), is widely considered the main mechanism for guiding individualized instruction and supports for students with disabilities around the world (Alkahtani & Kheirallah, 2016; Brojčin & Glumbić, 2017; Fu et al., 2020; Mitchell et al., 2010; Nota et al., 2017; Yang, 2017). Definitions can also vary depending on context but, broadly speaking, the IEP is defined as a written statement describing the special education programs and services for a student with a disability, which is developed, reviewed, and revised by a multi-disciplinary team on annual basis (Ontario Ministry of Education [OME], 2017).

Internationally, IEPs tend to include the following components: a student profile describing strengths and needs, annual academic and/or functional goals, a description of the special education supports and services the student is to receive including adaptations and/or modifications to their educational program (i.e., general curriculum access), educational placement (i.e., the location of instruction and special education supports and services) and, in some contexts, a transition plan to support the student through key changes, such as from secondary to post-secondary school (Fu et al., 2020; Lin & Fang, 2017; Mitchell et al., 2010; Nota et al., 2017; Sanches-Ferreira et al., 2017). Of equal importance to the IEP content is the process by which it is developed. That is, the IEP is created through a collaborative decision-making model involving members of a student's IEP team (Al-Shammari & Hornby, 2020).

Typically, this includes the general and special education teacher, a school administrator, representatives from relevant agencies, other professionals known to the student, parents/caregivers and, if appropriate, the student (Fish, 2008).

In some contexts, including the Canadian province of Ontario, students with autism spectrum disorder (henceforth referred to as autism) are among other students with disabilities who can have an IEP to guide their instruction. Autism is a neurodevelopmental condition associated with impairments in social communication and social interaction, as well as restrictive and repetitive interests, patterns of behaviour, and/or activities (American Psychiatric Association [APA], 2022). The last several decades have seen a steady increase in the number of students with autism in schools, growing fourfold since the year 2000 (Center for Disease Control and Prevention [CDC], 2022). With individualized instruction and supports, students with autism stand to benefit from inclusion in the general education classroom, which is associated with the development of both social/adaptive and academic/cognitive skills (Ferraioli & Harris, 2011). In terms of social/adaptive skills, the general education classroom confers countless opportunities for social and emotional learning through frequent interactions with same-aged peers (Able et al., 2015; Ferraioli & Harris, 2011; Habib et al., 2018; Roberts & Simpson, 2016). As for academic/cognitive skills, students in general education classrooms are more likely to participate in peer-mediated interventions, promoting access to age-appropriate curriculum and increasing engagement with learning activities overall (Carter et al., 2017; McCurdy & Cole, 2014).

However, the general education classroom environment can present specific challenges for students with autism (e.g., increased noise, expectations for group work, etc.), placing excessive demands on their sensory and social needs (Roberts & Simpson, 2016). Teachers,

therefore, must be equipped with extensive knowledge and skills to support the learning of students with autism specifically, including the ability to individualize instruction per a student's IEP (Haspel & Lauderdale-Littin, 2020; Shurr et al., 2022). This includes secondary-aged students with autism, who face additional challenges associated with inclusion (e.g., heightened risk of social isolation; Humphrey & Hebron, 2015) but have historically received less research attention due to the longstanding emphasis in the literature on early intervention (Esler et al., 2023; Odom et al., 2010).

Despite the importance of teachers' responsibilities related to the IEP, the increased prevalence of students with autism in schools, and the impetus toward inclusion, teachers report feeling ill-equipped to implement individualized instruction for students on the spectrum (Love et al., 2020; Ruble & McGrew, 2013). To ensure effective implementation of the IEP, teachers are required to engage in extensive planning (Ruble et al., 2014, 2020; Wong et al., 2017), the quality of which has a lasting impact on students (Snell-Rood et al., 2020). As an example, poor planning to implement the transition components of an IEP (e.g., strategies to support the student with their post-school plans) severely limits a student's access to services that facilitate future employment (Snell-Rood et al., 2020). This is particularly problematic for students with autism, who tend to have less positive post-school outcomes (e.g., low rates of independent living and post-secondary graduation) compared to their peers with disabilities in general (Bouck & Park, 2018; Findley et al., 2022; Ruble et al., 2019).

Research investigating the relationship between teachers' implementation of an IEP and outcomes for students with autism is extensive (Goldman & Gilmour, 2021; Love et al., 2020; Ruble et al., 2019; Wong et al., 2017), yet studies on how teachers plan to implement an IEP are scarce (Blackwell & Rossetti, 2014). Moreover, any such studies have primarily involved

teachers' engagement with IEPs for students with various disabilities as opposed to specific populations such as autism (e.g., Al-Shammari & Hornby, 2020; Rotter, 2014; Zagona et al., 2017). This gap persists despite decades of research establishing teacher planning as a highly complex cognitive process with significant implications for student learning (Borko et al., 1990; Clark & Yinger, 1979; Hall & Smith, 2006; Kagan, 1990; Westerman et al., 1991).

Teachers require considerable knowledge to meet the diverse needs of students with autism (Love et al., 2020; Goldman & Gilmour, 2021), but this is not yet a reality of teacher training programs (Brock et al., 2014, 2020; Kurth & Foley, 2014). The issue is exacerbated in Canada and, specifically, Ontario, where few universities require pre-service teachers to take courses concentrated on special education (Mau et al., in press; McCrimmon, 2015; Tremblay & Belley, 2017). In fact, the Ontario College of Teachers (OCT) formally removed the requirement for pre-service teachers to take special education courses (O. Reg 176/10) in 2010. However, as of 2015, standards for Ontario's teacher education program include "a sharper focus on equity and diversity; meeting the needs of students with special needs; child, youth and parental mental health issues in relation to teaching; and the use of technology as a teaching tool" (Dolik, n.d., para. 2). According to the Ontario Teachers' Federation (2024), this is achieved through the addition of two courses that focus on meeting the needs of diverse learners.

Rationale

Without addressing this gap in the research, providing an equitable education for students with autism is implausible in practice (Brock et al., 2020). The purpose of this study, therefore, was to examine general education teachers' planning as a precursor to implementing an IEP for secondary students with autism. Specifically, this research examined general education teachers' perceptions of the IEP and their own preparation to implement one, the cognitive processes they

enact while planning to implement an IEP, and accounts of their own planning experiences—all in the context of teaching secondary students with autism. Ultimately, this research adds to the literature on teacher planning relative to supporting secondary students with disabilities in general education classrooms. It also proposes a conceptual model for understanding teacher planning to implement an IEP for secondary students with autism specifically. This study addressed four main research questions: (1) What are general education teachers' perceptions of the IEP for secondary students with autism in inclusive classrooms? (2) How do general education teachers perceive their preparation to implement an IEP for secondary students with autism in inclusive classrooms? (3) What relationships, if any, exist between general education teachers' demographic characteristics (e.g., years of experience), perceptions of the IEP, and preparation to implement it for secondary students with autism in inclusive classrooms? And (4) How do general education teachers use IEPs in their planning to support secondary students with autism in inclusive classrooms?

Key Terms

Though situated in the Canadian province of Ontario, this research draws on international research, legislation, and policy. While some countries share a common vocabulary for concepts related to the IEP, certain terms have several definitions, which are not always complementary. This research also draws on concepts that are defined differently in the education and healthcare spaces. In the sections that follow, key terms are defined relative to the study context.

Autism Spectrum Disorder

This research draws on both the APA (2022) definition of autism noted above as well as the definition the OME (2022a) uses for school-based identification. Specifically, the OME describes autism as "a severe learning disorder that is characterized by: disturbances in rate of

educational development; ability to relate to the environment; mobility; perception, speech, and language; lack of the representational and symbolic behaviour that precedes language" (para. 6). In this study, the former is used to discuss autism diagnosis made in clinical contexts by medical professionals, and the latter to discuss school-based disability identification occurring in educational settings and involving a multi-disciplinary team of professionals (Tremblay & Belley, 2017).

Inclusive Education

One of the greatest challenges associated with inclusive education is agreeing on its operational definition (Haug, 2017). There is some consensus amongst international organizations on how to define inclusive education in the broadest sense (i.e., the right to education for all students). For students with disabilities, at the most basic level, inclusion is concerned with physical access to the general education classroom (Wehmeyer, 2006). This may be more aligned with integration, or the act of adding students with disabilities to general education classrooms without making any adjustments to instruction or the learning environment (United Nations Committee on the Rights of Persons with Disabilities, 2016). More nuanced conceptualizations of inclusive education tend to involve elements of academic and social inclusion (Haug, 2017). This is aligned with Loreman's (2009) analysis of the international literature and the definition used in this study, which indicates that inclusive education should have the following features: all children should be able to attend their neighbourhood schools, learn in classes alongside their same-aged peers, and participate in all aspects of school life. Additionally, this research draws on Article 24 of UNCRPD (2006) as a framework for understanding students' rights related to inclusive education, which includes individualized academic and social supports. Since this research takes place in Ontario, it is important to note

that the province defines inclusive education in terms of how students see themselves reflected in the curriculum, their physical environment, and their learning experiences (OME, 2009).

Individual Education Plan

The IEP is defined as a written statement for each child with a disability that is developed, reviewed, and revised through a multi-disciplinary team meeting (OME, 2017). This study conceptualizes the IEP in terms of required components and associated procedures in the province of Ontario (OME, 2022b). However, examples also draw on the international literature (e.g., Al-Shammari & Hornby, 2020; Fu et al., 2020; Leifler et al., 2021; Mitchell et al., 2010) to illustrate how various components and processes are developed and enacted.

Special Education

In this research, special education refers to the supports and services provided through an IEP to meet the needs of students with disabilities. Related, the term specialized or self-contained setting is used to refer to educational placement in a separate class or school where instruction and supports are delivered. Though the preference in Ontario is for inclusion in the general education classroom to the greatest extent possible, special education services are provided within specialized settings when necessary (OME, 2017).

Universal Design for Learning

Universal Design for Learning (UDL) is a framework for designing and delivering flexible teaching that meets diverse student needs (Capp, 2017). The principles of UDL are to provide multiple means of engagement, representation, and action and expression (CAST, 2024). Each principle is further broken down into guidelines and checkpoints intended to make learning more accessible (Capp, 2020). In this research, UDL is discussed relative to the IEP and inclusive education but should be considered a distinct concept.

Conceptual Framework

Teaching is both a complex and cognitively demanding activity (Westerman, 1991). This research therefore draws on theories of teacher cognition, and specifically teacher planning in its approach to analysis and interpretation of study findings (Borko et al., 1990). Teacher cognition refers to the beliefs, knowledge, and reflections that characterize how teachers think about teaching, their students, and the curriculum (Borg, 2003). It also encompasses teachers' metacognitive awareness of the problem-solving strategies they use to enhance their practice (Kagan, 1990). While few models focus specifically on teacher cognition, according to Borg (2003), it is shaped by four aspects of teachers' lives: schooling (i.e., a teacher's own educational experiences), contextual factors (i.e., school characteristics), professional coursework (i.e., pre-service and in-service training), and classroom practice. In turn, teacher cognition influences how teachers perceive their professional coursework and classroom practice (Borg, 2003).

Comparatively, there is a somewhat larger body of literature devoted to teacher metacognition (Greene, 2021; Jiang et al., 2016; Wall & Hall, 2016; Wilson & Bai, 2010). Metacognition is defined as "having knowledge (cognition) and having understanding, control over, and appropriate use of that knowledge" (Tei & Stewart, 1985, p. 47). Metacognition thus involves both conscious awareness and regulation of one's learning using metacognitive strategies (Wilson & Bai, 2010). One of the reasons for the emphasis on teacher metacognition in the literature is the importance of modelling metacognitive strategies to students (Perry et al., 2019). There is extensive evidence, for example, on the benefits of explicitly selecting and enacting metacognitive strategies (e.g., inferring) during reading instruction, including increased student comprehension and self-regulation (Ahmadi et al., 2013; Channa et al., 2015; Nash-Ditzel, 2010). There is also a growing body of literature demonstrating the importance of

metacognition for teachers engaging in self-directed professional learning (e.g., Beach et al., 2020, 2022a; Potgieter & van der Walt, 2022; Zohar & Ben-Ari, 2022). That is, teachers' use of metacognitive strategies during self-directed learning can enable the construction of knowledge whereby new information is linked to existing understandings (Garrison, 1997).

Teachers' Cognitive Processes

Recognizing the importance of metacognition in education research, Krathwohl (2002) extended Bloom's (1956) Taxonomy, a framework for learning divided into cognitive, affective, and psychomotor domains. Originally, the cognitive domain was organized into six categories: (a) knowledge, (b) comprehension, (c) application, (d) analysis, (e) synthesis, and (f) evaluation (Krathwohl, 2002). The categories were considered hierarchical in that they were ordered from simple to complex, and concrete to abstract (Anderson, 1999). Moreover, the structure of the knowledge category was dual such that it included both a noun and a verb, or the subject matter a learner was expected to know (noun), and what they were meant to do with that knowledge (verb). For example, if learners were expected to remember specific terminology, "specific terminology" represented the noun and "remember" represented the verb (Krathwohl, 2002).

Since knowledge was the only two-dimensional category in the original taxonomy, the revised version divided it into two distinct dimensions: a knowledge dimension and a cognitive processes dimension (Anderson, 1999; Krathwohl, 2002). Originally, the knowledge dimension encompassed three categories, or three types of knowledge: (a) knowledge of specifics, (b) knowledge of ways and means of dealing with specifics, and (c) knowledge of universals and abstractions in a field (Krathwohl, 2002). While the revision retained the substance of the original dimension's knowledge types, re-framed as "factual knowledge," "conceptual knowledge," and "procedural knowledge" respectively, a fourth type was also added:

"metacognitive knowledge." According to Krathwohl (2002), metacognitive knowledge encompasses strategic knowledge; knowledge about cognitive tasks, including contextual and conditional knowledge; and self-knowledge.

As for the cognitive process dimension, three categories were renamed, the order of two were interchanged, and all category names were converted to verbs: (a) remember, (b) understand, (c) apply, (d) analyze, (e) evaluate, and (f) create (Krathwohl, 2002). The first category in the taxonomy, "remember," replaced the original "knowledge" category, and "understand" replaced the original "comprehension" category. "Synthesis" was also re-named as "create" and changed places with "evaluate." According to Krathwohl, this latter change was considered better aligned with the structure of curriculum and the language teachers use in the classroom. Each category was further broken down into sub-categories (see Krathwohl, 2002).

Similar to the original, the revised taxonomy can be considered a hierarchy in that the main cognitive processes range in complexity (e.g., remembering is considered less complex than understanding; Krathwohl, 2002). However, as the revision was designed with teachers and the complexity of the classroom in mind, the revised categories are considered to have greater overlap and flexibility than they did previously (Anderson, 1999; Krathwohl, 2002). For example, in the case of "understand," some of the sub-categories (e.g., explaining) are considered more complex than those in other categories (e.g., executing within the "apply" category; Krathwohl, 2002).

Drawing on Krathwohl's (2002) revised taxonomy, Beach and Willows (2017) developed a list of cognitive processes to characterize teachers' verbalizations as they navigated a professional learning website under one of the three "think aloud" conditions. That is, teachers were asked to verbalize their thoughts aloud in a concurrent condition (i.e., while completing a

website task), a retrospective condition (i.e., immediately following a website task without any visual aids), or a virtual re-visit condition (i.e., immediately following a website task while viewing a screen recording of their navigations; Beach & Willows, 2017). The authors coded participants' verbalizations using a deductive coding scheme developed based on Ericsson and Simon's (1984, 1993) levels of verbalization, and studies related to website usability, teacher planning, and decision-making. The result is a list of cognitive processes that describe teachers' thoughts as they engage in a professional learning experience. These processes include: (a) planning, (b) connecting, (c) reasoning, (d) reflecting, (e) evaluating website content, (f) evaluating user experience, (g) diversion, (h) understanding, (i) describing procedural behaviour, (j) describing website features, and (k) reading (see Beach & Willows, 2017).

Beach and Willows (2017) further classified their list of cognitive processes as either higher or lower order processes. What are considered higher and lower can vary on an individual level (e.g., differences in a learner's history; Newmann, 1990). Moreover, the classroom represents a complex environment where such processes are often interwoven (Lewis & Smith, 1993). However, lower order processes can broadly be conceptualized as requiring only "routine, mechanistic application of previously acquired knowledge" (Newmann, 1990, p. 44). Conversely, according to Newmann (1990), higher order processes challenge learners to interpret, analyze, or manipulate information, often considering "a question to be answered or a problem to be solved" (p. 44). Beach and Willows (2017) categorized the cognitive processes in their list accordingly, with "diversion," "understanding," "describing," and "reading" considered lower order processes, and "planning," "connecting," "reasoning," "reflecting," and "evaluating" considered higher order processes.

Teacher Planning

As an aspect of teacher cognition, teacher planning refers to teachers' formulation of specific actions for implementing instruction over a set time period, such as a day, month, term, or year (Borko et al., 1990). Implicit in this and other conceptualizations of teacher planning are teachers' thought processes related to their students and the curriculum. Teachers must account for the social characteristics of classrooms in their planning, including their own interactions with students as well as interactions between students (Pianta et al., 2012). Moreover, teachers must enact curriculum and content knowledge to develop learning activities during planning (Harris & Hofer, 2011). Teachers' plans therefore shape their classroom practice which, in turn, informs the development of future plans, substantially influencing student learning and experience (Clark, 1984).

How Teachers Plan. Over the last several decades, different models of teacher planning have been proposed to explain how teachers prepare for whole group instruction (Hall & Smith, 2006). Initially, models of teacher planning were prescriptive (Borko et al., 1990). For example, Tyler's (1950) model described teacher planning as a four-step process that began with specifying behavioural objectives, followed by selecting and sequencing learning activities, and then evaluation procedures. Jackson (1968) similarly described teacher decision-making as a linear process whereby decisions were made before, during, or after instruction. While these models have been criticized for overlooking the influence of teachers' metacognition on their practice (Fenstermacher & Richardson, 2005), Jackson's model can be considered an early attempt to shed light on teachers' thought processes, or what was thought of as the "unobservable cognitive dimension of teaching" (Borg, 2003, p. 81).

A Process Model of Teacher Planning. About a decade later, Yinger (1977, 1980) proposed a three-stage model of teacher planning that accounted for the cyclical nature of the planning process. These stages are problem-finding; problem formulation/solution (design); and implementation, evaluation, and routinization (Yinger, 1980). According to Yinger (1980), the planning cycle begins with a problem-finding stage whereby teachers conceptualize plans based on their consideration of a variety of factors, such as the content to be covered. During this stage, teachers set out to discover an instructional idea that responds to a general teaching dilemma (Yinger, 1980). Typically, this is directed at the development or selection of an instructional task or learning activity (Housner & Griffey, 1985; Shavelson & Borko, 1979; Yinger, 1980). Teachers must also consider three major factors affecting the general teaching dilemma: the teaching environment and organization of the school (e.g., length of school day), the curriculum and resources available for teaching (e.g., physical teaching materials), and students' characteristics (e.g., attention span; Shavelson & Borko, 1979; Yinger, 1980). The problem-finding stage is then portrayed as the interaction between four elements: the planning dilemma facing the teacher, the teacher's knowledge and experience levels, the teaching goals, and the teaching materials (Borko & Shavelson, 2013). The product of the problem-finding stage is the initial problem conception, or an abstract idea that teachers deem worthy of further exploration. They do not yet know whether or how the idea will be used in the classroom, but it might initially emerge as pieces of a lesson (e.g., activities) at this stage. As long as the idea has not already been trialled and failed, it will lay the foundation for the next stage (Yinger, 1980).

In the second stage, problem formulation/solution (design), teachers engage in the design cycle (Yinger, 1980). That is, teachers repeatedly test their ideas until they find a satisfactory solution. The situation that confronts teachers in this stage can be likened to the one that

confronts thinkers in other areas, such as musical composition or chess (Chase & Simon, 1973; Yinger, 1980). The problem is not necessarily well-defined, and the goals to be achieved are open to interpretation at this point (Yinger, 1980). Thus, problem-solving fluctuates between problem development and re-formulation, with goals revised as information accumulates from the problem solver's attempts at solving parts of the problem. According to Yinger (1980), the planning problem is developed and resolved as it progresses through three sub-stages of elaboration, investigation, and adaptation, with teachers' knowledge and experience implicated throughout. During elaboration and investigation, teachers draw on their repertoire of methods for solving problems, and during adaptation, they reflect on their expectations and anticipated outcomes. During this stage, the problem will be solved, but success or failure is not yet determined (Yinger, 1980).

During the third stage, implementation, evaluation, and routinization, teachers engage in reflection on the instructional process. The results of this final stage will ultimately allow teachers to expand their repertoires of knowledge and experience which, in turn, will shape future planning. Evaluating the quality of plans largely depends on what teachers view as the desired product of planning. Since plans are a framework to guide future action (i.e., instruction), which is often influenced by a variety of contextual factors (e.g., student characteristics; Shavelson & Borko, 1979), a written document or lesson plan is seldom the focus of evaluation (Yinger, 1980). Rather, teachers tend to assess quality cognitively, considering how the plan fits within the larger scope of their knowledge and experience. Success can only be evaluated on implementation, which can occur during or after the plan has been enacted (Brown, 1993). Depending on the nature of the plan, evaluation may occur several days later, as students often need time to process and subsequently demonstrate their learning following implementation

(Yinger, 1980). According to Yinger, teachers may return to the design cycle to make some modifications or revisions at this stage but will ultimately accept or reject the plan as successful or unsuccessful. Successful plans will be further adapted through the process of routinization, becoming part of teachers' knowledge and experience base (Harris & Hofer, 2011). Once again, this part of the process can be likened to playing chess, whereby an experienced chess player is able to envision several strategies and choose a suitable one based on memory (Chase & Simon, 1973). Like chess players, teachers may be able to select a strategy based on their planning experiences in response to a particular planning problem (Yinger, 1980).

In Yinger's (1980) model, planning does not immediately lead to instruction. Rather, every planning event is influenced by previous planning and teaching experiences, reinforcing the importance of reflection for instructional development. While this cyclical model is considered a more accurate representation of teacher planning than linear models and does consider the role of metacognition (Borko et al., 1990; Borko & Shavelson, 2013), it fails to account for the ongoing mental planning that teachers report engaging in throughout the school day and its influence on instruction outside of devoted planning sessions (McCutcheon, 1980). That is, many teachers state that they fine tune instructional plans or mentally rehearse their lessons before delivering them (Hall & Smith, 2006; Mutton et al., 2011). Such rehearsal can include teaching certain skills and concepts, organizing and managing equipment, grouping students and activities, addressing behaviour, anticipating student responses, and predicting potential barriers to instruction (McCutcheon, 1980; Shavelson & Borko, 1979).

Why Teachers Plan. Teacher planning is both internally and externally motivated (Hall & Smith, 2006). Internal motivations for planning include a desire to meet immediate psychological needs, such as reducing anxiety about workload or reflecting on potential

responses to issues that could arise in the classroom (Clark & Yinger, 1979; Graff, 2011). Planning also provides teachers with an opportunity to make decisions about the pace of instruction and the timing of activities in advance (Sahin-Taskin, 2017). In a study of 18 pre-service teachers' lesson planning practices, Sahin-Taskin found that advanced planning helped participants use their time with students more efficiently and enabled them to tailor their teaching to meet individual needs. Planning can also help teachers develop their own content knowledge (Davidson et al., 2017). Accordingly, Roche et al. (2014) assert that "purposefully designed and trialled lesson plans are a key design feature in catalyzing teacher learning" (p. 560).

Conversely, external motivations for planning include meeting administrative requirements and leaving guidance for cover teachers in the event of an absence (McCutcheon, 1980; Zaragosa et al., 2023). Further, Clark and Yinger (1979) identified eight functions of teacher planning: (a) to determine the direction of the lesson, (b) to increase confidence about delivering a lesson, (c) to learn the material and/or refresh one's memory about the content, (d) to organize material for presentation purposes, (e) to determine the appropriateness of timing and flow of a lesson, (f) to determine how to best organize students, (g) to provide an outline for evaluation, and (h) to meet organizational and scheduling needs. Additionally, eight different types of teacher plans have been identified in the literature: (a) long-range, (b) short-range, (c) yearly, (d) term, (e) unit, (f) weekly, (g) daily, and (h) lesson (Yinger, 1980). While teachers perceive some plans as more important than others, deeming unit plans more important than weekly or daily plans, they acknowledge their dependence on one another, and that each is of little value on their own (Clark & Yinger, 1979; Hall & Smith, 2006).

Factors Affecting Teacher Planning. Teachers' own characteristics, such as their beliefs about their students and their teaching experiences, have also been shown to influence their

planning activities (Borko et al., 1990). Teachers' characteristics affect the development of knowledge structures for summarizing information, referred to as schemas, which house their professional knowledge (Anderson, 1984; Shavelson et al., 1986). Three types of schemas characterize how teachers think: "scripts" are knowledge structures that summarize information about everyday familiar events (e.g., assigning homework), "scenes" represent teachers' knowledge of people and relationships, and "propositional structures" represent teachers' knowledge of students, classrooms, curriculum, and instructional strategies (Anderson, 1976; Borko et al., 1990). Different teachers have a different propensity for storing information about their students, including mental representations of their students' abilities, affecting decision-making during planning (Borko et al., 1990). Though few studies have examined differences in teachers' schemas, experienced teachers are believed to have more elaborate schemas than novice teachers (Carter et al., 1987).

Moreover, according to these models, student characteristics are a salient factor in teacher planning (Anderson, 1976; Borko et al., 1990; Shavelson & Borko, 1979; Shavelson & Stern, 1981; Yinger, 1980). While individualized planning is noticeably absent from both the functions and types of teacher plans noted above, it is acknowledged as a key competency for teachers of students with disabilities (Petersen, 2016). Teachers require extensive knowledge when planning to implement individualized instruction (Shurr et al., 2022). Few studies, however, have examined how teachers plan to support students with disabilities in the general education classroom (e.g., Fuchs et al., 1992; Schumm & Vaughn, 1992; Schumm et al., 1994, 1995). Given the changing landscape of today's classrooms and the fact that all teachers must be equipped to support students with diverse needs in a shared learning environment, addressing this gap in the literature is critical (da Fonte & Barton-Arwood, 2017).

Summary

The IEP provides the foundation for individualized instruction and supports for students with disabilities (Drasgow et al., 2001). While the specific components of an IEP can vary with context, it typically includes a detailed description of a student's strengths and needs, annual academic and/or functional goals, required special education supports and services (including curriculum modifications), a statement of educational placement, and, in some cases, a transition plan to guide students through key educational changes (Mitchell et al., 2010). Equally important is the IEP process, which involves a school-based team that typically consists of teachers, administrators, other school professionals, family members and, when appropriate, the student (Tremblay & Belley, 2017). The IEP is especially critical for supporting the inclusion of secondary students with autism in general education classrooms, who require specific academic and social supports within these environments (Goldman & Gilmour, 2021; Love et al., 2020). Despite this, secondary students with autism have historically received limited attention in educational research compared to their younger counterparts (Esler et al., 2023). As the number of students with autism continues to grow (CDC, 2022), teachers report feeling underprepared to meet their needs, particularly when it comes to implementing IEPs (Love et al., 2020; Ruble & McGrew, 2013). Teacher planning has been identified as a critical factor in this process, yet few studies have examined how teachers plan to support students with disabilities. To address this gap, the present study draws on theories of teacher cognition (e.g., Krathwohl, 2002) and established models of teacher planning (e.g., Yinger, 1980). It also draws on research related to teachers' motivations for planning, contextual influences on planning, and various types of plans.

Organization of Dissertation

This dissertation consists of five chapters. Chapter 1 has introduced the topic and conceptual framework as well as outlined the study purpose and research questions. Chapter 2 summarizes the literature relative to the IEP, autism in the educational context, and teacher engagement with planning as a professional responsibility. Chapter 3 describes the two phases of this study, and the quantitative and qualitative methods employed in each. Chapter 4 presents the results from both study phases according to research question and concludes with a proposed conceptual model based on the qualitative analysis. Finally, chapter 5 is comprised of a discussion of select findings as they relate to the existing literature. Study limitations are discussed as well as implications for future research, policy, and practice.

Chapter 2: Literature Review

This literature review provides an overview of research and policy related to teachers' use of the IEP for students with autism. It consists of three sections: (a) the Individual Education Plan, (b) autism spectrum disorder, and (c) teacher engagement. The aim of this review is to examine the IEP conceptually while considering its significance in the international, Canadian, and Ontario contexts, specifically as it relates to students with autism and their teachers.

The Individual Education Plan

The IEP can be considered both a product and a process (Smith, 1990). That is, the IEP document is a product that requires a process to create. As a product, the IEP must contain specific components to ensure students with disabilities receive an effective educational program (Mitchell et al., 2010; OME, 2022b). As a process, IEP teams must adhere to specific procedures that bring schools and parents/caregivers together to develop a child's educational program (Rotter, 2014; Tremblay & Belley, 2017).

Recognizing that requirements and terminology vary with context, Tremblay and Belley (2017) describe seven common elements related to the IEP process in Canada: (a) communication, (b) identification, (c) planification, (d) collaboration, (e) adaptation, (f) regulation, and (g) transition. Each of the elements are centred around the first, communication, as the IEP represents both a written form of communication (i.e., the IEP as a product) as well as the basis of ongoing discussion between members of the IEP team (i.e., the IEP as a process).

The next element, identification*,* refers to the process of determining a student's eligibility for accessing special education supports and services in a school setting (Tremblay & Belley, 2017). While there is some debate over the usefulness of assigning students a disability label through the identification process (Reid et al., 2020), the overarching aim of identification

is to determine what a student needs to be successful at school (Frey, 2019). Specifically, according to Frey, data collected as part of this process can improve "the efficiency and precision with which we identify and monitor the learning and behavioural supports all students need to successfully navigate their learning environments—leading to more useful assessment data for educators, specialists, and parents" (p. 151). School-based identification is also an important mechanism of early intervention, enabling students to receive special education programming at critical stages of their development (Esler et al., 2023). It should be noted that identification is distinct to disability diagnosis, which typically occurs in a clinical context and is made by a medical professional. Thus, for the purpose of the IEP, identification can include students without an official disability label but have been deemed in need of special education programming by their school (Killoran & Parekh, 2017). Typically, this process is initiated at the request of a parent or principal and involves a multi-disciplinary team of professionals who make decisions based on multiple sources of data (e.g., psychoeducational assessments, parent reports, observation; OME, 2017).

Following identification, planification refers to the distribution of responsibilities among members of the IEP team for contributing to its development (Tremblay & Belley, 2017). It should be noted that the composition of IEP teams can vary according to local policy and legislation. For example, parent/caregiver participation in the IEP process is typically emphasized in educational policy but less often a legal requirement (Mitchell et al., 2010). Additionally, despite the benefits of student involvement in the IEP process (Diegelmann & Test, 2018; Test et al., 2004), participation rates are low (Sanderson & Goldman, 2021). Once responsibilities are distributed, planification enables collaboration, whereby everyone's efforts are focused on supporting the student to achieve their annual goals (Tremblay & Belley, 2017).

Next, adaptation refers to the agreed-upon accommodations (i.e., changes to assessment, instruction, or the environment) and modifications (i.e., changes to curriculum expectations) that are documented as part of the IEP process (OME, 2017). Once developed, regulation refers to the review process that is used to ensure that appropriate adjustments are made to the IEP on at least an annual basis (Tremblay & Belley, 2017). Lastly, the transition element ensures that students are supported through changes in their education and as they progress from one stage of life to the next (e.g., between elementary and secondary school, secondary school and post-secondary opportunities, etc.).

The Evolution of the IEP

While the UNCRPD (2006) was the first legally binding international human rights treaty to emphasize the importance of individualized education, the idea was not new. The concept of the IEP was initially borne out of the Education for All Handicapped Children Act (EHA) of 1975 (Public Law 94-142) in the United States (US), later reauthorized as the Individuals with Disabilities Education Act (IDEA; 1990) and the Individuals with Disabilities Education Improvement Act (IDEIA; 2004). Prior to EHA, only one in five children with disabilities attended school, and several states had laws excluding students with specific disabilities from the education system (US Department of Education, 2024). At that time, the focus was on promoting physical inclusion in general education so students could simply attend school (Frey, 2019). Since then, disability legislation and policy have evolved to give greater emphasis to individualized educational programming, facilitating students' inclusion in social and academic activities (Wehmeyer et al., 2006).

Guided by what was happening in the US and influenced by advocacy groups across Canada, several provinces took it upon themselves to develop their own policy related to

educating students with disabilities (McBride, 2013). Years later, the Canadian Charter of Rights and Freedoms (1982) formally established the rights of children with disabilities to education. Specifically, Section 15 came into effect in 1985, and stated that all individuals were equal under the law without discrimination based on several characteristics, including mental or physical disabilities (McBride, 2013). Today, under the Constitution, each province and territory in Canada remains responsible for its own Education/School Act, though these must be consistent with Section 15 of the Charter (1982).

The IEP came to be in Ontario with the Education Amendment Act (1980), more commonly known as Bill 82 (Elkin, 1982). Under Bill 82, school boards were required to provide special education services to students with disabilities in their neighbourhood schools, which included the development of an educational program or plan based on continuous assessment and evaluation (Education Amendment Act, 1980). This became the framework for the IEP, which was to be developed with input from a student's parents/caregivers (OME, 2017). It also established the rights of parents to appeal decisions related to a student's IEP through the Ontario Special Education Tribunal (Tribunals Ontario, 2020).

The IEP as a Product

As a product, the IEP must contain certain components in accordance with a country's policy and legislation (Drasgow et al., 2001; Gartin & Murdick, 2005; Tremblay & Belley, 2017). As the US was one of the first countries in the world to pass laws protecting the rights of individuals with disabilities (Walker, 2014), much of what is known about the content of IEPs stems from IDEIA (2004) and the American context. In the paragraphs that follow, the following five IEP components are broadly defined in terms of their international relevance: (a) student profile, (b) annual goals, (c) special education supports and services, (d) educational placement,

and (e) the transition plan. Research related to the various components is summarized, and then each component is situated within the Ontario context.

Student Profile. A student's IEP typically begins with an overview of their strengths and needs and/or current levels of achievement based on formal and informal assessments (Mitchell et al., 2010). Though terminology varies, this typically takes the shape of a student profile. Research related to the information presented in a student profile has primarily focused on its alignment with another IEP component: annual goals (Kurth et al., 2022). In an investigation of IEP compliance with state standards, Hott et al. (2021) examined 133 IEPs from seven rural school districts in the US. Analysis revealed that less than seven percent of IEPs were aligned with the statement of a student's goals. Specifically, IEPs either lacked goals that addressed all areas of need identified in their profile or included goals that addressed areas not implicated in their profile. Additionally, 74% of IEPs did not indicate how a student's disability affected their academic achievement (Hott et al., 2021). In a similar study, Spiel et al. (2014) evaluated the extent to which 97 IEPs had student profiles that aligned with annual goals for middle schoolers with attention deficit hyperactivity disorder. The authors found that fewer than half of IEPs (47%) had alignment between student profiles and annual goals. Evidence is emerging that the quality of the information in student profiles significantly predicts student achievement. In a recent study of the relationship between student profiles, student outcomes, and teacher training, Burns et al. (2023) found that quality of the student profile significantly predicted students' winter achievement scores over and above fall achievement scores and teacher variables (i.e., level of education and years of experience). Since student profiles provide the foundation for the rest of the IEP, research investigating how teachers engage with them is of critical importance (Goran et al., 2020).

Ontario. In Ontario, the student profile section encompasses the reasons for developing the student's IEP as well as the student's strengths and needs (OME, 2022b). This section also includes general student information (e.g., name, age, grade, etc.), the date of the last meeting to review a student's identification and placement, information about a student's identification and placement, and relevant medical conditions. The student profile states the courses to which the IEP applies, as well as summarizes assessment data from relevant reports. Additionally, according to the OME, the description of a student's strengths and needs is fundamental to the development of the student's special education programming and determining whether they will have accommodations (i.e., changes to assessment, instruction, or the environment), modifications (i.e., changes to curriculum expectations), or be placed on an alternative program focused on functional skills not leading to a course credit. Students can have an IEP that is accommodated only, modified (with or without accommodations), or alternative (with or without accommodations). If an IEP is accommodated only, the special education program section of the IEP does not need to be completed, which includes a description of the student's current levels of achievement, annual goals, and learning expectations. Since accommodations are unrelated to curriculum expectations, they are likely to apply to all of the student's courses (OME, 2022b).

Goals. A student's IEP must include annual goals that address the needs identified in the student profile (Swain et al., 2022). Goals should be specific and time-bound with the aim of taking students from their current level of achievement to a reasonably higher level during the time period specified (Goran et al., 2020). Additionally, annual goals should focus on a student's strengths and needs as well as an assessment of their potential for growth (Hedin & DeSpain, 2018). Therefore, the IEP team should consider a student's skills in the context of their current school environment as well as beyond (e.g., potential post-secondary opportunities; Goran et al.,

2020). Typically, academic goals are based on grade-level standards with consideration given to how progress is measured and reported (Kurth et al., 2022). Annual goals can also focus on the development of social, emotional, or behavioural needs; functional skills; or, for secondary-aged students, transition skills (Goran et al., 2020).

In addition to research examining the relationship between the information presented in a student profile and annual goals, several studies have focused on the quality (i.e., specificity) of annual goals as a standalone feature of the IEP (e.g., Goodwin et al., 2022; Rakap, 2015; Rakap et al., 2024). Goodwin et al. (2022) assert that the quality of annual goals is based on six features: (a) observability, (b) measurability, (c) functionality, (d) generalizability, (e) application in daily tasks, and (f) clarity. Early research examining IEP goal quality found that annual goals were often too broad and framed as sweeping statements about the curriculum rather than as specific learning outcomes (Giangreco et al., 1994). Giangreco et al. provide the example goal that "Peter will improve his communication skills," pointing out that such statements provide no information about which communication skills Peter should focus on. More recently, writing specific and measurable annual IEP goals remains a challenge for many (Hedin & DeSpain, 2018). In a study examining the IEPs of 49 students with traumatic brain injury, Goodwin et al. (2022) analyzed the quality of IEP goals according to the six features stated above. On average, annual goals received a score of 3.74 on the quality scale, which ranged between 1-6. Similarly, in a study involving the IEPs of 100 preschool children, overall quality of annual goals was consistently rated as poor regardless of a child's age, disability type, and developmental domain (Rakap, 2015). Considering that goal quality is associated with improved learning outcomes for students, these findings are concerning (Müller et al., 2023; Ruble & McGrew, 2013).

Monitoring Progress Toward Goals. Monitoring student progress toward annual IEP goals is an aspect of the IEP process that must be documented in the IEP itself (Harmon et al., 2020). Therefore, the IEP must indicate the nature of any data to be collected and analyzed for the purpose of progress monitoring (Goran et al., 2020). Evaluating a student's progress against their annual goals enables teachers to determine the effectiveness of educational programming, leading to the development of improved programming in the future (Etscheidt, 2006).

Despite its importance, few studies have focused on how teachers use the IEP to document methods for monitoring student progress (Blackwell & Rosetti, 2014). In a study focused on progress monitoring involving the IEP more broadly, Swain et al. (2022) surveyed 2,085 special education teachers on their data collection methods. While teachers in the sample reported using diverse methods to collect data relative to a student's IEP, not all methods were aligned with what would be considered best practice. For example, observation was the most frequently reported method of data collection among teachers in the sample. Observation is typically appropriate for collecting data on a student's progress towards social or behavioural goals, but it is less appropriate for academic goals compared to other methods, such as curriculum-based assessment (Swain et al., 2022).

Related, Turnbull et al. (2018) raised concerns about existing systems for monitoring student progress towards different types of annual IEP goals. Specifically, they posit that progress towards goals in the social-affective domain is more difficult to monitor through the types of assessment systems to which teachers are accustomed for basic skills like reading, writing, and math. Additional barriers to progress monitoring have also been identified in the literature, including a lack of adequate training and materials for teachers (Swain et al., 2022). Although empirical studies are still few in number, several practitioner publications lay out

systematic steps for progress monitoring relative to the IEP (e.g., Jasper et al., 2015; Rojo et al., 2021; Stockall et al., 2014; Vannest et al., 2011).

Ontario. In Ontario, a student's annual goals are stated as part of the special education program section of the IEP (OME, 2022b). As noted, only modified and alternative IEPs include this information. The OME distinguishes between some modified expectations and significantly modified expectations. Students with some modifications have annual goals that are developed from the overall expectations of the course, whereas students with significant modifications have annual goals that are not necessarily related to grade-level expectations for the course but may be tied to the development of skills such as memory, inquiry, analysis, and application. The OME (2022b, section 4.1) provides the following example of a goal for a Grade 9 student with some modified expectations in science:

> In science, by the end of the year, [the student] will be able to relate science to the environment; develop the basic skills, strategies, and habits of mind required for scientific inquiry; and demonstrate an improved understanding of some of the basic concepts of science (Science, Grade 9, Applied).

Conversely, an example of a significantly modified expectation for a secondary-aged student in drama is: "In drama, by the end of the semester, [the student] will demonstrate improvement in his understanding of drama and further develop his performance, creative, and communication skills" (OME, 2022b, section 4.1). Lastly, the OME (2022b, section 4.1) presents the following example of an alternative program goal for a secondary-aged student:

> By the end of the semester, [the student], with minimal support, will be able to follow instructions when making various transitions throughout the day – transitions from one

activity to another within the special education classroom and transitions to or from a transportation vehicle.

Supports and Services. Next, the IEP must state the special education supports and services (SAS) to be provided to the student (Goran et al., 2020). According to Kurth et al. (2022), this element of the IEP should address the areas of need identified through the student profile (i.e., strengths and needs). Moreover, the provision of SAS should enable the student to work toward their annual goals, make progress in the general curriculum, and learn alongside their non-disabled peers (Goran et al., 2020). There is also a strong association in the literature between SAS and educational placement, with some scholars concluding that delivery in inclusive environments can "prevent unnecessary placements outside of the general education class" (Kurth et al., 2019a, p. 209).

Few studies have focused on SAS as a standalone component of the IEP (Kurth et al., 2019a). However, the US provides an interesting example of how legislation, research, and practice converge when it comes to the IEP. According to IDEIA (2004), the delivery of SAS should be based on peer-reviewed research to the greatest extent possible. However, what constitutes SAS is not stated in the legislation, and research related to SAS is severely limited (Toews et al., 2021). In their investigation of the types of SAS for students with significant support needs, Kurth et al. (2019a) identified only one relevant peer-reviewed article (i.e., Etscheidt & Bartlett, 1999), which describes a four-step process for selecting SAS. According to Etscheidt and Bartlett, selection of SAS should be based on four domains: social-behavioural support needs, collaborative support needs for school staff, supports related to the physical environment, and supports related to instruction. Kurth et al. (2019a) recently updated this conceptualization through a descriptive study of 88 IEPs of students with significant support

needs. They found that, despite the intention for SAS to facilitate students' involvement in the general curriculum, it frequently reflected their removal from the general education classroom (e.g., accessing special education settings, taking breaks throughout the school day, etc.). While guidance on selecting and implementing SAS certainly exists through online sources such as special education textbooks, empirical studies involving various disability populations are needed for the development of effective practice (Kurth et al., 2019a).

Ontario. This section of the IEP is aligned with what the OME (2022b) describes as special education strategies, resources, and other accommodations. While this section is primarily focused on strategies for individualized instruction and the accommodations students require to support their learning, it also encompasses a record of any instruction and/or consultation provided by special education teachers and other professionals (e.g., educational assistants, speech pathologists, psychologists, occupational therapists, etc.). Moreover, Policy/Program Memorandum (PPM) exist that stipulate specific services for particular populations of students when deemed appropriate. For example, PPM 140 specifies that methods of applied behaviour analysis (ABA) should be incorporated into educational programming for students with autism (OME, 2007). The provision of ABA and any other services must be documented in the IEP, including when the service was initiated, the planned frequency of the service, and where the service is provided (i.e., general education classroom, resource or withdrawal classroom, or separate specialized setting; OME, 2022b).

Educational Placement. The IEP must also state a student's educational placement (i.e., the location of instruction and SAS). In some contexts, this also includes a statement of the extent to which a student will spend time outside of the general education classroom and an explanation of why it is necessary (e.g., the US; IDEIA, 2004). While the UNCRPD (2006)

articulates a strong preference for placement in the general education classroom, placements fall along a continuum that ranges from least to most inclusive (Anastasiou et al., 2015; Yell & Prince, 2022; Yell et al., 2020c). Research examining educational placement and the variables associated with such decisions is extensive (e.g., Agran et al., 2020; Banerjee et al., 2017; Kurth, 2015; Kurth et al., 2014; Minuk et al., 2024; Segall & Campbell, 2014). Despite this, only one known study (i.e., Kurth et al., 2019b) has examined educational placement information as a component of the IEP. In their analysis of 88 IEPs for students with significant support needs, Kurth et al. identified several issues with these statements including the absence of a justification for time spent outside of the general education classroom. As noted previously, placement decisions tend to be tied to the delivery of SAS, which ideally facilitates a student's inclusion in the general education classroom (Kurth et al., 2019a; Toews et al., 2021). However, Kurth et al. (2019b) did not find any references to the provision of such supports in statements describing educational placement, nor any documentation of discussions about how SAS could be used to facilitate inclusion. While Kurth et al.'s study is a starting point for research involving the educational placement component of the IEP, the authors call for research that includes IEP team members' perspectives to contextualize the decisions.

Ontario. Information about a student's educational placement is contained in the student profile section of the IEP (OME, 2017). While Ontario shares in the UNCRPD's (2006) preference for placement in the general education classroom (Ontario Human Rights Commission [OHRC], 2018), there are currently five provincial options for the classroom placement of students with disabilities: (a) indirect support, (b) resource assistance, (c) withdrawal assistance, (d) partially integrated, and (e) fully self-contained (OME, 2017). The first three options are considered inclusive in that students spend more than 50% of the school

day in the general education classroom, whereas the latter two involve either part or full-time status in a separate specialized setting. Educational placement is determined as part of the IEP process through an Identification, Placement, and Review Committee (IPRC), a team-based decision-making model involving at least three members, one of whom must be an administrator, and ideally a child's parents/caregivers (OME, 2017). Once a placement has been assigned through the IPRC process, it is documented in the IEP and must be in place within 30 days (OME, 2022b). The placement is subject to annual review along with the student's identification to ensure both are still appropriate year after year (OME, 2017).

Transition Plan. In some contexts, the transition component of the IEP refers to a plan to support the student through key transitions throughout their educational journey, such as their entry to school or change from one school to another (Mitchell et al., 2010). More often, the transition plan is specific to post-secondary environments. That is, by the time a student reaches a certain age (typically around 16), the IEP must contain a transition plan including measurable post-secondary goals related to further education, employment, independent living, or community participation, as well as a description of the transition services that will help the student achieve their goals (Kraemer et al., 2022). The transition plan is thus key to ensuring student success in post-secondary settings (Patton & Kim, 2016).

Research has explored the transition component of the IEP from a variety of angles, including transition plan quality (e.g., Findley et al., 2022; Kraemer et al., 2022; Ruble et al., 2019). Recently, Findley et al. (2022) evaluated the quality of 20 transition plans for students with autism. While all of the IEPs in the sample contained at least one post-secondary goal, they were described as disconnected to other elements of the IEPs, such as the information presented in a student's profile. In a similar study involving the IEPs of 62 youth with autism, Kraemer et

al. (2022) scored transition plans according to six elements: (a) measurable post-secondary goals, (b) transition assessment, (c) transition services, (d) course of study, (e) connection to annual IEP goals, and (f) a total plan score. Overall, transition plans received an average score of 10.5, though scores ranged between 3-20. While the authors found that transition services were typically aligned with students' post-secondary goals, course of study and transition assessments generally were not. Lack of cohesion between the transition and other components of the IEP can undermine its effectiveness, calling attention to the need for increased educator knowledge in this area (Findley et al., 2022; Szidon et al., 2015). Though more research is required, teacher professional development holds promise as a means of improving the quality of transition components (Flannery & Helemn, 2015; Flannery et al., 2015)

There is also a large body of literature focused on student involvement in the transition planning process (e.g., Chandroo et al., 2018; Johnson et al., 2020, 2022; Raley et al., 2023). While student participation in transition meetings has increased over time (Griffin et al., 2014), an analysis of large-scale longitudinal data revealed that approximately 30% of transition-aged youth had not met with school staff to discuss their transition plan (Johnson et al., 2022). Moreover, there is evidence that some disability populations have been included in the transition planning process to a lesser extent than others. Johnson et al. (2020) found, for example, that despite being invited to transition planning meetings, approximately 40% of students with significant cognitive disabilities (i.e., autism, intellectual disability, and multiple disabilities) participated very little. Chandroo et al. (2018) similarly found that students with autism have had minimal active involvement in the transition planning process. Research into students' and other stakeholders' perspectives on transition planning has the potential to improve transition plan participation and, in turn, transition outcomes (Cavendish et al., 2020).

Ontario. Transition plans for students aged 14 and older have been a required component of the IEP since 1998 (O. Reg 181/98). Originally, the intention of the transition plan was to support secondary-aged students with the transition from school to work, post-secondary education, or community living (OME, 2013). However, in 2000, the OME expanded this requirement, stipulating that all IEPs required a transition component to support students with transitions throughout their educational journey (e.g., from home or an early years program to school, from one grade or school level to the next; OME, 2022d). This requirement has since been reinforced in PPM 156, which requires principals to facilitate the development of transition plans in consultation with parents (OME, 2013a). Transition plans must contain various components, including specific goals related to the student's transition, actions required to facilitate the transition, the parties responsible for assisting the student with the transition, and timelines for the implementation of actions related to the transition (OME, 2022b).

The IEP as a Process

As a process, the IEP is associated with several requirements that ensure schools adhere to policy and legislation to provide educational programming for students with disabilities (Smith, 1990). The IEP process varies from country to country but typically entails collaborating with members of an IEP team, which includes facilitating the involvement of parents/caregivers and, if appropriate, students; identifying students with disabilities; and reviewing and revising the IEP (Tremblay & Belley, 2017). The sections that follow describe aspects of the IEP process that commonly precede implementation (Al-Shammari & Hornby, 2020), which are then further contextualized for the province of Ontario.

Collaboration. Once the IEP team has been established, IEP development encompasses creating the content of the IEP and developing mechanisms for reviewing and revising the IEP

(Yell & Bateman, 2020). This typically occurs through IEP meetings, where team members collaborate to make decisions related to the student's educational programming (Fish, 2008). In addition to the research on parent/caregiver and student participation in the IEP process summarized below, much of the research involving IEP teams has examined the dynamics of the team as a whole (e.g., Beck & DeSutter, 2020; Mueller & Vick, 2019). Findings from these studies indicate that professionals tend to dominate the decision-making process. As an example, in a case study of the IEP meeting of a five-year-old boy, Ruppar and Gaffney (2011) found that professionals accounted for 86% of verbalizations during the IEP meeting. Such power dynamics can also put students attending meetings at a disadvantage, leading Martin et al. (2006) to call for special education teachers "to disengage themselves in favour of their students assuming a greater leadership role" (p. 197).

Parent/Caregiver Involvement. While parent involvement in education is important for all children, parent participation in the IEP process can facilitate the development of quality educational programming and lead to more positive student outcomes (Fish, 2008; Goldman & Burke, 2017). The rights of parents/caregivers to participate in decisions related to their children's education is protected in the United Nations (1993) Standard Rules on the Equalization of Opportunities for Persons with Disabilities (Rule 6) and is meant to protect the child's best interests (Banerjee et al., 2017). However, parent/caregiver participation in the IEP process is often recommended but not necessarily required (Tremblay & Belley, 2017).

Even when parent involvement is mandated, there is substantial evidence that parents have limited input into the IEP process (Kurth et al., 2020a; Love et al., 2017). Parents often report feeling marginalized during IEP meetings, and that the school does not value their input (Elbaum et al., 2016; Fish, 2008; McKenna et al., 2023; Rosetti et al., 2020). Common barriers to

parent participation in IEP meetings include difficulties related to scheduling and the use of educational jargon (Cavendish & Connor, 2018). Parents also tend to be outnumbered by school personnel during IEP meetings, which can make it more difficult for them to speak up (Blackwell & Rossetti, 2014; Kurth et al., 2020a). Culturally and linguistically diverse parents face additional barriers as they navigate the IEP process, including limited access to information about their rights and the IEP itself (Rossetti et al., 2020). Moreover, the nature of the IEP process itself may be incompatible with some parents' belief systems about disability and cultural assumptions regarding communication with school personnel or those perceived to be in a position of authority (Harry, 2008).

Parent satisfaction is emerging as an important construct in research related to the IEP process (Kurth et al., 2019c, 2020a; Love et al., 2017) In a study of parents' experiences with the IEP process, Slade et al. (2018) examined 142 parents' satisfaction with four elements of the IEP: (a) the content of the IEP, (b) the special education services provided through the IEP, (c) the extent to which the rest of the IEP was aligned with the services provided, and (d) the perceived effectiveness of the IEP team. More than half of parents in the sample reported being dissatisfied with at least one element of the IEP (61%), and close to half were at least somewhat dissatisfied with either the IEP content or the services provided (46% and 47%, respectively). A substantial proportion reported that their child's IEP did not align with the services that were actually provided and considered the IEP team to be ineffective (39% and 40%, respectively; Slade et al., 2018). Racialized parents have also been found to report lower levels of satisfaction with the IEP process than white parents, reinforcing the existence of additional barriers for families of diverse backgrounds (Wagner et al., 2012).

Student Involvement. There is overwhelming agreement in the literature about the importance of student involvement throughout the IEP process (Cavendish et al., 2017; Diegelmann & Test, 2018; Martin et al., 2006; Sanderson & Goldman, 2020). Specifically, students can learn the following through participating in the IEP process: (a) how to describe their disability, strengths, needs, and rights; (b) how to evaluate their own progress and set appropriate goals; and (c) how to determine their accommodation needs and secure such accommodations (Test et al., 2004). According to Test et al., the IEP meeting also provides students with opportunities to: (a) advocate for themselves in a formal setting, (b) communicate their interests and preferences, (c) take accountability for areas requiring improvement, and (d) discuss their post-school plans. Other benefits associated with student participation include increased academic achievement (Barnard-Brak & Lechtenberger, 2010) and a better understanding of the resources available to students with disabilities (Nolan-Spohn, 2016).

Additionally, there is substantial evidence that explicitly teaching students to participate in the IEP process is an effective strategy for building self-determination skills (Shogren et al., 2015; Test et al., 2004). Often used interchangeably with self-advocacy, the concepts share a common goal: "to move the student from the passenger's seat to the driver's seat of life" (Sebag, 2010, p. 23). Self-determination encompasses skills such as decision-making, goal-setting, problem-solving, self-regulation, and self-awareness, all of which can be taught through the IEP process (Test et al., 2004). Involving students in both the development and implementation of their IEPs represents an optimal opportunity for students to hone these skills, which are associated with positive post-school outcomes including increased rates of employment and access to work benefits, greater earning potential, and higher quality of life (Shogren et al., 2015; Wehmeyer et al., 2013).

Despite these demonstrated benefits and the existence of policy promoting student involvement in the IEP process, student participation remains limited (Barnard-Brak & Lechtenberger, 2010). In a study involving 1,183 parents of students with disabilities across grade-levels, Sanderson and Goldman (2021) found that approximately one third of students attended their most recent IEP meeting. Moreover, attendance did not promise participation, with almost 20% of students described as "inactive" during meetings. Accordingly, researchers are turning their attention to resources that promote student participation in the IEP process, such as My IEP (Royer, 2017) and the Self-Directed IEP (Seong et al., 2015). Findings from these studies have shown significant improvements in students' involvement in IEP meetings as well as increased self-determination skills (Royer, 2017; Seong et al., 2015).

Ontario. Principals in Ontario are required to ensure that parents and students aged 16 and older are consulted in the development of the IEP, and that a copy is provided to them (O. Reg. 181/98). A log of parent/student consultation must be prepared and attached to the student's IEP to ensure all efforts to fulfill this requirement have been made (OME, 2022b). Parents and students aged 16 and older are then asked to sign a form indicating if they were consulted in the development of the IEP (or if they declined to participate), received a copy of the IEP, and provided comments (OME, 2022b). Parents' roles in the IEP process include providing up-to-date information (e.g., assessment reports) about their child, creating context for school staff in understanding the child's strengths and needs, providing feedback on the child's progress based on observations at home, maintaining an open dialogue with the school, and reinforcing educators' efforts outside of school (OME, 2017, 2022b). According to the OME, students' roles include further contextualizing their strengths and needs for school staff, assisting in the development of annual goals, participating in monitoring progress towards their goals, and

contributing information relative to their future plans. While only students aged 16 and older are required to be consulted, the OME (2017, 2022b) recommends that students of any age be involved in the process to the greatest extent possible. One way to facilitate student involvement is through the use of All About Me Portfolios for elementary students and Individual Pathways Plans for secondary students, whereby students document their learning about career/life planning relative to their own strengths and needs (OME, 2013b).

Identification. One of the functions of the IEP process is to determine whether a student should be identified as having a disability or receive special education programming (Tremblay & Belley, 2017). Together with the IEP, identification can serve as an important gateway for accessing supports and services. Moreover, while inclusion in general education classrooms is meant to be the first consideration for all students (UNCRPD, 2006), in some cases, there is evidence in both policy and practice that disability identification is tied to educational placement (Shurr et al., 2025). Thus, not only can disability labels come with a certain stigma, but also, they can inadvertently contribute to a process that separates students with disabilities from their peers (Minuk & Shurr, 2024).

In recent years, researchers with a critical orientation have questioned the need for disability identification, or the use of labels to convey information about diverse student needs (e.g., Reid et al., 2020). Such criticisms are aligned with the move away from the medical model of disability whereby the impetus is on the individual to "fix" their impairment (Bingham et al., 2013). There are many promising approaches to meeting the needs of all students in the general education environment regardless of disability identification and associated labels (e.g., UDL; CAST, 2024; multi-tiered systems of support; Leonard et al., 2019). For the time being, however, the IEP remains an important mechanism for accessing supports and services in schools.

Ontario. There are two avenues by which a student can receive an IEP in Ontario: through a formal IPRC meeting, or as a non-identified student (i.e., a student who is deemed to be in need of special education supports and services before having an IPRC; OME, 2022c). According to the OME (2022c), the IPRC's role is to determine if a student is exceptional (i.e., whether they have behavioural, communicational, intellectual, physical, or multiple needs), select the most appropriate educational placement for the student, and review the identification and placement at least annually. Once a child has been identified through an IPRC, an IEP must be in place within 30 days. While parents' right to participate in the IPRC is not subject to the same legal safeguards as it is in the US, parents have the right to appeal IPRC decisions (Education Amendment Act, 1980; Tribunals Ontario, 2020).

Review. Though requirements vary, IEPs are generally reviewed at least annually (Al-Shammari & Hornby, 2020; Mitchell et al., 2010). Research examining IEP team members' experiences with the review component of the IEP process is limited (Rosas et al., 2009). However, studies that have evaluated IEP documents themselves demonstrate that IEPs are frequently missing required components, fail to adhere to specified timelines, and fall short of standards for quality (Findley et al., 2022; Kurth et al., 2022; McKenna et al., 2023). Moreover, an analysis of IEP-related litigation in the US found that 24% of cases were related to issues with IEP development and review (Zirkel & Hetrick, 2017).

Ontario. The OME (2022b) sets out specific requirements for reviewing and updating the IEP. As part of the implementation and monitoring process, the principal must ensure they have reviewed the IEP with the staff member responsible for its development and implementation (OME, 2022b). Once the IEP is in place, members of the IEP team are responsible for collecting and documenting information that will be used to determine what adjustments to a student's

special education program are needed (OME, 2022b). If significant adjustments are needed, parents and students aged 16 and older must be updated before implementing any changes. Additionally, the OME (2022b) is clear that the IEP is a working document. As such, minor revisions may be made if strategies cease to be effective. Each time a revision is made, the working copy of the IEP must be included in the student's Ontario Student Record (OSR), replacing previous outdated versions (O. Reg. 181/98).

Criticisms of the IEP

From their inception in 1975, the IEP has been wrought with criticism in terms of both its quality and utility (Espin et al., 1998; Etscheidt, 2006; Huefner, 2000; Smith, 1990; Thompson et al., 2001; Tran et al., 2018). While the literature reviewed thus far has highlighted the importance of crafting a high-quality IEP (e.g., Burns et al., 2023; Findley et al., 2022; Kraemer et al., 2022; Kurth et al., 2022; Ruble et al., 2019; Zirkel & Hetrick, 2017, etc.), their utility to teachers is essential to examine. In this regard, however, criticisms of the IEP may be better conceptualized as criticisms of teacher preparation and practice related to the IEP.

Early research (e.g., Dudley-Marling, 1985; Giangreco et al., 1994) established that teachers were not regularly accessing IEPs. Previously, this may have been due to the fact that IEPs were less readily available, often locked away within a central location within the school (Dudley-Marling, 1985). Even with the increase in digital management and storage of IEPs, there is reason to believe that teachers are still not regularly accessing them. In a study of teacher engagement with IEPs in the US, Rotter (2014) examined whether 426 general and special educators read IEPs, how often they reviewed them, and how they took notes on the IEP to inform their instructional planning. Participants were also asked to report their perceptions of the usefulness of various sections of the IEP for their planning. While teachers reported receiving

IEPs early in the school year and having relatively easy access to them, 23% of general and 31% of special educators indicated that they held off on reading IEPs so they could get to know their students first. While a lower proportion of participants reported not reading IEPs at all (6% and 1% of general and special educators, respectively), a substantial number indicated that they referred back to IEPs less than once per month (36% of general and 29% of special educators, respectively). Such findings have led some researchers to describe digitally managed IEPs as a trade-off: while electronic tools have enabled teachers to access IEPs more efficiently, the lack of individualization characteristic of some IEP software can make the content less useful (More & Hart Bennett, 2014).

Teachers' beliefs about the amount of knowledge they have related to the IEP and its components may also explain their more limited engagement with them (Al-Shammari & Hornby, 2020). For example, there is evidence that teachers recognize the importance of data collection but feel they lack the skills to collect data effectively (Ruble et al., 2018). Teachers are often tasked with collecting multiple data sources without training in how to interpret or synthesize it (Fuchs et al., 2016). Without this type of training, teachers will be less confident in making data-informed decisions (Datnow & Hubbard, 2016). This issue is not unique to data collection, with research demonstrating that teachers reported more limited knowledge related to writing annual IEP goals (e.g., Ruble et al., 2010), progress monitoring (Swain et al., 2022), and transition planning (Deardorff et al., 2021). Findings from the literature thus raise questions about the utility of the IEP in its current form, as well as teacher preparation for IEP implementation (Kurth et al., 2022).

The Canadian Context

In Canada, education is the sole responsibility of the provinces and territories (the Constitution Act, 1867). All provinces and territories require the development of an IEP for students with disabilities, but legislation and policy related to IEPs varies both between and within jurisdictions (McBride, 2013). This is evidenced through the use of different terminology in different regions (e.g., Personalized Learning Plan in New Brunswick; Personal Program Plan in Saskatchewan; Individual Program Plan in Alberta and Nova Scotia; and Individual Support Services Plan in Newfoundland and Labrador; Dworet & Bennett, 2002; Towle, 2015) and the absence of a shared definition of the IEP (Tremblay & Belley, 2017). Considering this variation, Tremblay and Belley's comparative analysis of the IEP in Canada is a useful framework for discussing it as both a product and process.

In terms of the IEP as a product, each jurisdiction except for Nunavut has an existing IEP template (Tremblay & Belley, 2017). For the most part, the presentation of these templates are considered flexible so long as the appropriate content is included. As an example, Manitoba specifies that student needs should dictate the presentation, length, and amount of detail included in an IEP (Manitoba Education, 2010). Yukon appears to take exception to this, with required IEP components listed in the territory's Education Act (2002). According to Tremblay and Belley (2017), Alberta, British Columbia, and Saskatchewan's IEP templates contain the highest number IEP components, whereas Nova Scotia's contains the fewest. It should also be noted that more than half of jurisdictions do not stipulate a transition plan for students from one year to the next.

While several provinces and territories require either a school-based identification of special needs or medical diagnosis of disability to develop an IEP, Newfoundland and Labrador is the only province that uses medical diagnosis exclusively (Department of Education, 2021).

Some provinces, such as New Brunswick and Nova Scotia, prefer a non-categorical identification system based on a student's needs (New Brunswick Department of Education and Early Childhood Development, 2019; Nova Scotia Education, 2008). Once the student's strengths and needs have been identified, planning begins when members of the IEP team meet to discuss which adaptations are appropriate in helping the student achieve their goals (Tremblay & Belley, 2017). Typically, the principal leads planning and collaboration efforts, with parents/caregivers involved to varying degrees. Next, IEP team members review the data gathered through interventions and adjust the IEP accordingly. While some jurisdictions (e.g., Nunavut) do not specify the frequency of reviews, others (e.g., Ontario) stipulate this as an annual requirement (Nunavut Department of Education, 2023; OME, 2017). While reviews may address various components of the IEP in practice, some policy (e.g., OME, 2017) only requires identification and placement to be reviewed.

Autism Spectrum Disorder

Autism can be diagnosed as a medical condition in clinical contexts and identified as a disability in school settings. While autism diagnosis follows the Diagnostic and Statistical Manual (DSM-5-TR) criteria (APA, 2022) and is made by medical professionals, school-based identification uses jurisdictional definitions of autism, and is typically made by a multi-disciplinary team of professionals (Duesenberg et al., 2022). According to the DSM-5-TR, autism is a neurodevelopmental condition characterized by persistent difficulties in social communication and social interaction as well as restrictive and repetitive patterns of behaviour, activities, and interests (APA, 2022). To be diagnosed with autism, children must display difficulties with social communication and social interaction manifested by deficits in social/emotional reciprocity (e.g., failure to initiate or respond to social interactions); non-verbal

communication (e.g., difficulty understanding and using gestures); and developing, maintaining, and understanding social relationships (e.g., difficulty engaging in shared imaginative play; APA, 2022). Children must also display restrictive and repetitive patterns of behaviour, activities, and interests that meet at least two of the following criteria: repetitive or stereotyped motor movements, use of objects, and/or speech; insistence on sameness or adherence to routine, or ritualized patterns of behaviour; restricted interests that are atypical in either intensity or focus; or hyper or hypo-sensitivity to sensory input (APA, 2022). To receive a diagnosis, characteristics must be present early in development; cause functional impairment in social, occupational, or other settings; and cannot be better explained by another condition (e.g., intellectual disability; CDC, n.d.). Clinicians must therefore specify if diagnosis is with or without an accompanying intellectual or language impairment; a known medical and/or genetic condition or environmental factor; or another neurodevelopmental, mental, or behavioural condition (APA, 2022).

Previous Diagnostic Criteria

Under the DSM-IV-TR (APA, 2000), children who displayed characteristics associated with autism could be diagnosed with five different pervasive developmental disorders: (a) autistic disorder, (b) Asperger's syndrome, (c) pervasive developmental disorder—not otherwise specified, (d) childhood disintegrative disorder, or (e) Rhett's syndrome. With the publication of the DSM-5 and the DSM-5-TR (APA, 2013, 2022), these disorders became subsumed under the umbrella of the autism spectrum. The diagnosis was meant to be more representative of all individuals who displayed any of the characteristics of autism-related disorders (Volkmar & Reichow, 2013). It was also meant to address the issue of a lack of reliability amongst clinicians in assigning an appropriate diagnosis (Bent et al., 2017). It should be noted, however, that the changes have been criticized for reducing the scope, flexibility, and sensitivity of the diagnostic

criteria (Volkmar & McPartland, 2014; Volkmar & Reichow, 2013). While the prevalence of autism has increased substantially since 2013 (CDC, 2022), several scholars (e.g., Gibbs et al., 2012; Mayes et al., 2014; Smith et al., 2015) assert that a sub-group of individuals who would have met the criteria for a pervasive developmental disorder under DSM-IV-TR (APA, 2000) do not meet the criteria for autism (APA, 2013, 2022).

The publication of the DSM-5 brought about two additional changes in the diagnosis of autism: symptoms no longer needed to be apparent before three years of age, and severity of symptoms could be specified (APA, 2013). For the former, characteristics of autism must still be present early in development but may not manifest themselves until the social demands of the child's environment exceed their capacities (e.g., when they are school-aged). For the latter, severity can be specified at three levels: requiring support (level 1), requiring substantial support (level 2), and requiring very substantial support (level 3). Individuals requiring support may display inflexible behaviour that interferes with functioning in at least one context and, without adequate supports, may experience significant impairments in social communication and social interaction. Individuals requiring substantial support tend to have marked deficits in communication skills as well as difficulty managing changes across multiple contexts. Lastly, individuals requiring very substantial support may experience extreme difficulties in communication as well as challenges coping with change that can affect functioning across all spheres (APA, 2013, 2022). While each level of severity warrants an autism diagnosis, the range of abilities and needs that exist along the spectrum should be noted (de Giambattista et al., 2019; Koegel et al., 2020).

Diagnostic Prevalence

Approximately 1 in 100 individuals have an autism diagnosis worldwide (World Health Organization [WHO], 2023). According to the WHO, this figure is likely an under-representation considering difficulties accessing diagnosis and related services in low- and middle-income countries. There is also evidence that autism prevalence is growing globally, which may be attributed to increased public awareness and changes to diagnostic criteria (Zeidan et al., 2022). This is in line with findings from the US (CDC, 2022), where publicly available prevalence data has provided insight into diagnostic trends over time. According to the CDC, autism diagnosis has increased more than fourfold since 2002, when it was 1 in 150. Since then, it has steadily climbed (1 in 125 in 2004; 1 in 110 in 2006; 1 in 88 in 2008; 1 in 68 in 2010; 1 in 69 in 2012; 1 in 59 in 2014; 1 in 54 in 2016; and 1 in 44 in 2018) to the current rate of 1 in 36 (CDC, 2022).

In Canada, autism surveillance began in 2015 with the Public Health Agency of Canada's (PHAC; 2018) first national prevalence study focused on children and youth aged 5-17 years old. Based on data collected from six provinces and one territory (i.e., Newfoundland and Labrador, Nova Scotia, Prince Edward Island, New Brunswick, Quebec, British Columbia, and Yukon), findings were intended to provide a baseline for future research and to inform the development of autism-related programming (PHAC, 2018). According to the report, 1 in 66 Canadian children and youth had an autism diagnosis as of 2015, which was relatively close to the CDC's (2022) estimates for 2014 and 2016 (1 in 59 and 1 in 54, respectively). More recently, PHAC (2022) reported that 1 in 50 children and youth were diagnosed with autism based on data collected during the 2019 Canadian Health Survey on Children and Youth. It should be noted, however, that PHAC's (2018) report was based on children and youth aged 5-17 whereas the

2022 report was based on those aged 1-17. Thus, the differences in the samples make it difficult to draw meaningful conclusions about changes in prevalence over time.

Moreover, limited publicly available data in Canada makes it difficult to determine autism prevalence in the province of Ontario. Previously, the number of children awaiting access to the Ontario Autism Program, which provides funding and support to children with autism and their families (Government of Ontario, 2024a), could be used as a proxy as children needed a written diagnosis to access the program. While the Government of Ontario has stopped posting the number of children on the waitlist, it was over 51,000 in 2022 (Aelick, 2022).

School-Based Prevalence

Due to regional differences in how schools approach autism identification, school-based prevalence rates can be subject to substantial variation internationally (Zeidan et al., 2022). For example, autism prevalence in France (0.4%), Poland (0.3%), and Germany (0.4%) are believed to be underestimated as data are derived from sources that do not always include milder cases, such as health insurance companies (Bachman et al., 2018; Narzisi et al., 2020; Skonieczna-Żydecka et al., 2016; Van Bakel et al., 2016). Moreover, since special education eligibility typically requires the presence of an educational impact on the student, and not all students diagnosed with autism in clinical settings meet that criterion, prevalence rates can be lower in school settings (Esler et al., 2023). There are some cases, however, where students might only be identified through educational evaluations. For example, data from the CDC's Autism and Developmental Disabilities Monitoring Network (ADDM) indicates that approximately one quarter of students who met the criteria for autism in 2014 were identified exclusively through school sources without a documented clinical diagnosis (Wiggins et al., 2020). These findings,

however, must be interpreted in the wider context of a country's education system and society (e.g., access to services, awareness of autism, etc.).

Access to identification has been linked to demographic factors such as race/ethnicity (Safer-Lichtenstein et al., 2020; Zeidan et al., 2022). Specifically, in the early years of ADDM, autism prevalence amongst white children was 50% higher than Black and Hispanic children (CDC, 2023). According to the CDC, this gap is beginning to close: for the first time in 2020, white children had a lower autism prevalence rate than their Black and Hispanic counterparts. However, white children with autism are more likely to be diagnosed at an earlier age (Safer-Lichtenstein et al., 2020). Schools should thus be aware of this disparity and its implications for identifying ethnically and racially diverse children with autism (Aiello et al., 2017).

Apart from Newfoundland and Labrador, all provinces and territories have processes in place to identify students with disabilities in Canadian schools (Tremblay & Belley, 2017). In Ontario, school-based identification is based on the OME's (2022b, para. 6) definition of autism, which they describe as "a severe learning disorder that is characterized by: disturbances in rate of educational development; ability to relate to the environment; mobility; perception, speech, and language; lack of the representational and symbolic behaviour that precedes language." As of 2021-2022, there were over 18,165 elementary and 8,930 secondary students identified with autism in Ontario schools for a total of 27,095, representing ~17% of all students with disability identifications (Government of Ontario, 2022). However, this excludes the nearly 200,000 students who are non-identified (i.e., awaiting an identification through an IPRC meeting) as well as the nearly 14,000 students identified as having multiple exceptionalities. Moreover, the fact that more than twice as many elementary students were identified with autism compared to their secondary counterparts may mirror broader trends in diagnosis. That is, it is likely that an

equal number of older students have the characteristics of autism but missed diagnosis or identification earlier in development due more limited autism awareness (Minuk et al., 2024). Thus, school-based prevalence of autism in Ontario is likely much higher than what is reported.

Implications for Education

The growing prevalence of autism coupled with the global move toward inclusive education for students with disabilities has resulted in a substantial increase in the number of students with autism served in general education classrooms (Able et al., 2015). While there are many definitions of inclusive education, for students with disabilities, it typically refers to their right to learn in the general education classroom alongside their same-aged peers and within their neighbourhood school (Loreman, 2009). Moreover, individualized supports are provided within the general education classroom to maximize both academic and social inclusion (UNCRPD, 2006). There is a growing body of empirical evidence in favour of inclusive education for students with disabilities, with scholars citing benefits such as higher achievement in language and math, increased rates of secondary school graduation, and more positive relationships with peers (Hehir et al., 2016). Long-term benefits have also been observed: compared to students educated in separate specialized settings, students with disabilities who were included in general education classrooms have an increased likelihood of continuing on to higher education and securing employment (Kefallinou et al., 2020). Inclusive education is believed to be especially beneficial for students with autism as the general education classroom is rich in naturally occurring opportunities to practice social communication skills with same-aged, typically developing peers (Habib et al., 2018).

Inclusive Education for Students with Autism. Research on the benefits of inclusive education for students with autism has focused on both social/adaptive and academic/cognitive

outcomes (Ferraioli & Harris, 2011). In terms of social/adaptive outcomes, the general education classroom is ideal for providing students with frequent opportunities to socialize with their peers (Carter et al., 2017). Planned peer-mediated interventions can confer similar advantages, such as improvements in social, communication, and non-verbal skills (Aldabas, 2019; Chang & Locke, 2016). Peer-mediated interventions also have academic benefits, such as a reduction in off-task behaviour in students with autism as young as seven (McCurdy & Cole, 2014). As for other academic/cognitive outcomes, Kurth and Mastergeorge (2010a) examined the academic profiles of 15 adolescents with autism educated in inclusive and specialized settings. The authors found that students who were included in general education classrooms had significantly higher scores on achievement tests, which measured skills traditionally considered difficult for students with autism (e.g., abstraction and inference). More recently, Kim et al. (2018) conducted a longitudinal study examining the academic achievement of 111 students with autism at age nine and again at eighteen. Compared to those who accessed their education in specialized settings, students who remained in the general education classroom had superior academic, cognitive, and language skills at both time points (Kim et al., 2018). While interpretation of these findings must be tempered by the fact that students in specialized settings tend to have more significant support needs (Kleinert et al., 2015), they lend support to the preference for the general education classroom for students on the spectrum.

Despite these demonstrated benefits, students with autism have been reported to be among the least included disability populations in general education classrooms (Bock et al., 2016; de Bruin, 2019). Proponents of separate specialized settings for students with autism argue that these classrooms have a highly structured environment that general education cannot provide (Lauderdale-Littin et al., 2013). Furthermore, the general education classroom can present

challenges for students with autism specifically, such as increased sensory and social demands of the environment (Able et al., 2015). Such arguments are aligned with Kauffman and Badar's (2014) perspective that instruction, not inclusion, should be the primary focus for students with disabilities. However, as Agran et al. (2020) assert, inclusion is part of instruction, and one does not cancel out the other.

IEPs for Students with Autism. The National Research Council (2001) has articulated specific guidelines for teaching students with autism in the following content areas: (a) social skills, (b) communication skills, (c) engagement in developmentally appropriate activities, (d) fine and gross motor skills, (e) cognitive and academic skills, (f) behaviour, and (g) organizational skills. However, research evaluating IEPs for students with autism has noted that IEPs do not always adhere to these guidelines (Kurth & Mastergeorge, 2010b; Ruble et al., 2010). Similarly, several studies have raised concerns around the quality of specific IEP components for students with autism (e.g., Findley et al., 2022; Kraemer et al., 2022; Ruble et al., 2019). For example, in a study of 20 youth with autism, Findley et al. (2022) found that transition plans were generally misaligned with governmental policy, contained limited content related to best practice recommendations for teaching students with autism, and were misaligned with other components of the IEP, such as descriptions of a student's current levels of achievement. These findings are of particular concern in light of poor post-school outcomes for adults with autism compared to other disability populations, such as lower rates of employment and independent living (Snell-Rood et al., 2020). While a substantial portion of the research has focused on stakeholder perspectives related to the IEP for students with autism (e.g., Chandroo et al., 2018; Kurth et al., 2020a; Slade et al., 2018), considerably fewer have focused on teachers (Martin et al., 2006).

Teacher Training Related to Autism. Teachers of students with autism in general education settings require a greater understanding of the environmental factors that can impact a student's classroom experience (e.g., noise, crowding, changes to routine, etc.), the relationship between these factors, and the stress and anxiety that students can experience at school (Roberts & Simpson, 2016). Teachers must therefore be equipped with an array of strategies to meet the needs of students with autism in inclusive environments based on the most recent research (Bolourian et al., 2021; Oliver-Kerrigan et al., 2021). However, the availability of high quality in-service training for teachers of students with autism is scarce (Alexander et al., 2015). Moreover, teacher training tends to focus on delivering instruction rather than planning for it (Petersen, 2016). While research related to teacher planning to support students with disabilities is limited (Vaughn & Schumm, 1994), studies of teacher planning that explore how teachers engage with the IEP can shed light on teachers' perceived lack of preparation to develop and implement IEPs for students with autism.

Teacher Engagement

Teacher engagement refers to the allocation of personal resources (i.e., physical, emotional, and cognitive) toward one's teaching responsibilities (Klassen et al., 2013; Saks et al., 2008). Of the myriad factors that can influence students' academic success, teachers are considered the most important (Burroughs et al., 2019; Jimerson & Haddock, 2015; Rivkin et al., 2005; Rockoff, 2004). Providing students with teachers who are highly engaged in their work is thus critical (Klassen et al., 2013).

Teacher engagement is emerging as an important construct in the education of students with autism (Love et al., 2020; Ruble & McGrew, 2013). Previous research in this realm, however, has primarily focused on how teachers interact with students with autism themselves

(e.g., Ruble et al., 2008; Ruble & McGrew, 2013) rather than the physical, emotional, or cognitive resources devoted to the planning that comes beforehand. Therefore, in the context of this research, teacher engagement refers to how teachers engage with the IEP for students with autism—an important precursor to interaction with students as well as individualized instruction. This broad conceptualization also aims to capture teachers' perceptions of their preparedness to plan to implement an IEP for a student with autism, and the alignment between relevant teacher responsibilities and preparation through training.

Teacher Preparation

Pre-Service Training. Teacher preparation to deliver special education programming to students with disabilities begins with pre-service training. Initial teacher education, however, is insufficient for teachers to learn all that they need to enact effective practices for students with disabilities on day one (Leko et al., 2015). Rather, general and special education teachers alike must engage in ongoing professional learning to meet students' needs (Holmqvist & Lelinge, 2021; Shepherd et al., 2016; Woulfin & Jones, 2021). In Canada, pre-service teachers must receive a general teaching license before pursuing special education certification (Dworett & Bennett, 2002). Since the emphasis in Ontario is on inclusive education, general education teachers also have responsibilities related to supporting students with disabilities, including remaining up-to-date on special education knowledge and practice (OME, 2017). They must also work with parents and other school personnel to develop, review, and update students' IEPs, as well as deliver programs based on IEPs (Tremblay & Belley, 2017). However, courses focused on inclusive education are almost absent from Bachelor of Education programs at Canadian universities (Mau et al., in press; McCrimmon, 2015). As a result, both pre- and in-service

teachers report feeling unprepared to meet the needs of students with disabilities in inclusive settings (Sokal & Sharma, 2014; Specht et al., 2016).

In-Service Training. While some Canadian provinces (e.g., Newfoundland and Labrador) offer additional degree programs in the area of special education (Memorial University, 2024), training requirements related to special education for those in inclusive settings are generally minimal (Dworett & Bennett, 2002). In Ontario, for example, teachers are required to complete at least the first part of a three-part specialist certification to teach in a separate specialized setting but need no such qualifications for the general education classroom (OME, 2017). This amounts to approximately 125 hours of training, which is entirely self-directed (e.g., Queen's University, 2024). Teachers can opt to take additional qualifications (AQs) focused on specific disabilities, such as Teaching Students with Communication Needs (Autism Spectrum Disorder). Uptake of this course was low in 2020 with 1,125 teachers enrolled (OCT, n.d.). While the course was among the most popular AQs that year, enrollment represented less than 1% of Ontario teachers (OME, 2023).

Teacher Responsibilities

Teaching responsibilities related to special education vary internationally but, broadly speaking, teachers must demonstrate a set of competencies to effectively deliver special education programming to students with disabilities (Shurr et al., 2022; Tran et al., 2018). In countries that have committed to the UNCRPD (2006), this includes the ability to implement individualized academic and social support measures. While this was previously the responsibility of special education teachers, today, general and special education teachers share accountability for IEP development and implementation in inclusive school systems (Rotter, 2014; Zagona et al., 2017).

Considering difficulties associated with defining inclusive education (Haug, 2017), articulating teachers' responsibilities related to inclusion is challenging (Pellicano et al., 2018). While Article 24 of the UNCRPD (2006) provides a useful starting point, it stops short of specifying teachers' responsibilities. Rather, General Comment No. 4 (United Nations Committee on the Rights of Persons with Disabilities, 2016) emphasizes that inclusive education is the responsibility of governments, though teachers are responsible for training one another in inclusive practice through a whole school approach. Thus, on national and local levels, the concept of inclusive education is largely left open to interpretation, resulting in variations in how it is actioned through policy and practice (Anastasiou et al., 2015; Van Mieghem et al., 2020).

Teachers have several responsibilities related to teaching students with autism, including assessing individual needs, identifying and selecting appropriate interventions to meet individual needs, and delivering interventions (Brownell et al., 2010). Effectively carrying out these responsibilities necessitates extensive teacher training across academic, functional, and communication domains and in the use of evidence-based practices (Launderdale-Littin & Brennan, 2017; Wong et al., 2015). Roberts and Simpson (2016) summarized the research related to schools' and teachers' responsibilities in meeting the needs of students with autism. Frequently cited responsibilities included facilitating family involvement and collaboration; modifying and structuring the environment, curriculum, and instruction; and maintaining awareness and knowledge of autism. Teachers tend to lack the training to execute these responsibilities upon entering the field, resulting in lower confidence to meet students' needs (Haspel & Lauderdale-Littin, 2020). It should be unsurprising, then, that even when students with autism are included, "the degree and nature of that inclusion is often deeply questionable" (Pellicano et al., 2018, p. 387). In particular, students with autism frequently experience social isolation at school (Brede et

al., 2017; Harris & Hofer, 2011). There is thus an urgent need for training focused on practices to increase the inclusion of students with autism, including through the use of individualized support measures (Pellicano et al., 2018).

Moreover, research involving elementary students with autism has dominated the literature due to the longstanding emphasis on early intervention (e.g., Fontil et al., 2019; Koegel et al., 2014; Wong et al., 2015). The unique needs of secondary-aged students with autism and associated responsibilities for high school teachers warrant further examination. For example, teachers of older students with autism have additional responsibilities related to the transition component of the IEP, which contains post-secondary goals in the realms of education, training, employment, and independent living skills (Alverson et al., 2019). Yet, studies examining the quality of transition plans for students with autism and subsequent transition outcomes for this population indicate that teachers may struggle to fulfil their responsibilities in this regard (e.g., Findley et al., 2022; Wehman et al., 2014). High school teachers of adolescents with autism must also be equipped to implement age-appropriate social and academic interventions (Kucharczyk et al., 2015). With the exception of peer-mediated interventions, both research and training in this realm are severely limited (Odom et al., 2010). Research investigating teachers' understanding of their responsibilities related to the IEP for secondary students with autism can offer insight into some of the challenges that appear to be associated with implementation.

Based on previous research with special education teachers (i.e., Ryndak et al., 2001; Shurr et al., 2022), Shurr et al. (2024) assert a combined 12 competencies for teachers of students with autism and developmental disabilities: (a) collegial collaboration, (b) family collaboration, (c) school/community assistance, (d) inclusive practice, (e) advocacy, (f) individualized curriculum, (g) instruction, (h) behavioural support, (i) transition support, (j) physical and

sensory support, (k) research engagement, and (l) educational assistant support. Several of these competencies are implicated in the IEP process and can provide a useful framework for understanding how teachers engage with their professional responsibilities related to the IEP for secondary students with autism.

Teacher Planning

An aspect of teacher cognition, teacher planning refers to teachers' formulation of a course of action carried out over a lesson, a day, a week, a term, or a year (Borko et al., 1990). Shaped by teachers' thought processes, planning serves as a mental image of upcoming actions, informing decisions such as curriculum content to be covered, the focus of a given lesson, how students will be organized within the classroom, and the nature of teacher-student interactions (Hall & Smith, 2006). The planning process can thus be viewed as one that connects curriculum, instruction, and student learning (Hall & Smith, 2006). While much of teacher planning is documented in writing (e.g., through lesson plans), a substantial amount is mental, spontaneous, and ongoing (Borko et al., 1990). Innovative research methods are thus critical for gaining insight into teachers' thought processes (Clark & Peterson, 1986; Vaughn & Schumm, 1994).

Using the Think Aloud Method to Study Teacher Planning. Researchers have used a wide range of methods to study teacher planning including but not limited to questionnaires, interviews, ethnography, content analysis, simulations, and think aloud protocols (Borko et al., 1990). According to Borko et al., each of these methods can be used to examine different parts of the planning process (e.g., reasons for planning, how teachers plan, factors that affect planning, etc.). The think aloud method involves asking participants to verbalize their thoughts while completing a task (Ericsson & Simon, 1998), which can provide insight into how teachers plan (Vaughn & Schumm, 1994). Typically, researchers using a think aloud protocol will invite

participants to a one-to-one session to complete a task. Participants are asked to focus on what they are thinking rather than why they are thinking it, and to speak continuously with the researcher prompting as necessary (i.e., during a prolonged period of quiet; Wolcott & Lobczowski; 2021). Data collected from this process can be both coded and quantified to address a wide range of research questions (Chi, 1997).

Though similar, think aloud protocols are distinct to cognitive interviews, which involve asking targeted questions while participants complete a task (Priede & Farrall, 2011; Wolcott & Lobczowski, 2021). Cognitive interviews examine participants' comprehension of a task, while think aloud protocols provide insight into their thought processes, such as their plans, beliefs, and decisions (Clark & Peterson, 1986). Think aloud protocols are thus preferred for generating data on the thinking that occurs during the completion of cognitive tasks (Ericsson & Simon, 2003; Jaspers et al., 2004). Two common protocols used extensively in educational research are the concurrent think aloud and the retrospective think aloud (Beach & Willows, 2017; Wolcott & Lobczowski, 2021). The virtual re-visit think aloud is a variation of the retrospective think aloud whereby screen capture technology is used as a visual aid to support the recall of previous thought processes (Beach & Willows, 2017).

Concurrent Think Aloud. Concurrent think aloud protocols require participants to verbalize their thoughts as they perform a task (Ericsson & Simon, 1998). According to Ericsson and Simon, the concurrent think aloud is the closest reflection of cognitive processes in their most natural state, making them an appropriate research methodology for studying thought processes. Often employed in website usability research, the concurrent think aloud method can provide insight into web-based behaviours with the aim of evaluating a website's content and accessibility (Alhaderti & Mayhew, 2017). However, it has also been used in a handful of

education studies with both school-aged and adult learners (e.g., Branch, 2006; Cowan, 2019; Leighton, 2017). In one such study, Han and Kelley (2022) compared the thought processes of students from different disciplines as they developed design strategies. Findings from this study offered insight into different approaches to design cognition with specific implications for science, technology, engineering, and mathematics education. A noteworthy criticism of the concurrent think aloud method is that verbalizing one's thoughts increases cognitive load and thus interferes with task performance, resulting in reports that are more procedural in nature (Beach & Willows, 2017). Despite these limitations, it remains the more commonly used think aloud protocol (Alshammari et al., 2015).

Retrospective Think Aloud. With the retrospective think aloud, participants first complete a task and then verbalize their thoughts afterward, sometimes while viewing a video recording of their task performance (Van Den Haak et al., 2003). This variation, also known as the virtual re-visit think aloud (Beach & Willows, 2014, 2017), is believed to generate more elaborate data as participants are not subject to the same cognitive demands as they are during the concurrent think aloud (Alshammari et al., 2015). In recent years, the retrospective and, specifically, virtual re-visit think aloud has gained traction in educational research. For example, Beach et al. (2020, 2021a, 2022a) examined teachers' cognitive processes while navigating literacy-oriented professional learning websites. In each case, participants' verbalizations were considered complex and characterized by high-level learning processes. The authors concluded that engaging in the virtual re-visit think aloud enabled participants to elaborate on their thoughts rather than merely describing their behaviours, reinforcing the benefits of the retrospective approach (Beach et al., 2022a). A limitation of this method, however, is that participants may misremember or produce a biased account of how they completed a task (Van Den Haak et al.,

2003). This may be due to participants' dependence on short-term rather than working memory (Alshammari et al., 2015).

Thus, both the concurrent and retrospective think aloud protocols have benefits and limitations that must be considered in their selection. However, the concurrent think aloud is ideal if the aim is to capture participants' thought processes in their most natural state (Ericsson & Simon, 1998). Conversely, the retrospective approach is ideal when the cognitive load associated with verbalizing one's thoughts could potentially interfere with task completion, leading to less elaborate data (Alshammari et al., 2015). The protocol should be selected based on the research aims to temper the limitations of each method and maximize potential benefits (Wolcott & Lobczowski, 2021).

Summary

This review has synthesized the literature on IEPs, autism, and teachers' engagement with their professional responsibilities in relation to both. In addition to summarizing international research, legislation, and policy, sources specific to Canada and Ontario are integrated throughout. This review also underscores teachers' critical role in implementing IEPs, with instructional planning identified as a foundational yet understudied aspect of this process. Although teacher planning has been established as a major influence on student learning, little is known about how teachers approach planning to deliver individualized instruction for students with disabilities, including autism. The present study sought to address this gap in the research.

Chapter 3: Methodology

This study made use of a multimethod research design (Hunter & Brewer, 2015) to investigate how secondary teachers engage with the IEP for students with autism. Specifically, this study addresses four main research questions: (1) What are general education teachers' perceptions of the IEP for secondary students with autism in inclusive classrooms? (2) How do general education teachers perceive their preparation to implement an IEP for secondary students with autism in inclusive classrooms? (3) What relationships, if any, exist between general education teachers' characteristics (e.g., years of experience), their perceptions of the IEP, and their preparation to implement it for secondary students with autism in inclusive classrooms? And (4) How do general education teachers use IEPs in their planning to support secondary students with autism in inclusive classrooms?

Quantitative and qualitative data were collected and analyzed in two concurrent phases. Phase 1 was primarily quantitative in nature and used a survey design. Phase 2 was qualitative in nature and combined a concurrent think aloud protocol with follow-up semi-structured interviews. It should be noted that the concurrent think aloud was chosen over a retrospective or virtual re-visit variation as to capture participants' thought processes in their most natural state (Ericsson & Simon, 1998). Additionally, as the task involved reviewing a static document, there were no concerns about cognitive load interfering with task completion (Alshammari et al., 2015). Select qualitative findings were also quantified to add another dimension to analysis.

Research Context

This research was conducted in the Canadian province of Ontario. In Ontario, education consists of three divisions: early childhood education (pre-Kindergarten), elementary school (Kindergarten to Grade 8), and secondary school (Grade 9 to 12; People for Education, n.d.).

Parents have a choice of sending their children to either an English secular (*n* = 31), English Catholic (*n* = 29), French secular (*n* = 4), or French Catholic school board (*n* = 8). There are also currently 10 school authorities, which consist of geographically isolated school boards, as well as six hospital-based school authorities (OME, 2025). While parents can also opt to send their children to a private or independent school, the most recent estimate from Statistics Canada (2021) suggests that approximately 92% of Canadian students are enrolled in public education.

As of 2023-24, there were 1,419,642 elementary and 660,856 secondary students enrolled in Ontario's public school boards (OME, 2025). Of these students, 202,950 elementary and 149,925 secondary students have an IEP, representing 14.57% and 23.57% of each student population respectively (Government of Ontario, 2024b). While some students with IEPs access their education in a separate specialized setting, the general education classroom must be the first consideration for a student's classroom placement (O. Reg. 181/98, 1990; OHRC, 2018). As of 2017-18, the majority of students with autism in Ontario public schools accessed their education in inclusive settings (Minuk et al., 2024). Specifically, a median of 86 (*IQR* =148) elementary and 47.5 (*IQR* = 100.5) secondary students are placed in general education classrooms for more than 50% of the school day. Conversely, a median of 6 (*IQR* = 53) elementary and 15 (*IQR* = 43.3) secondary students attend separate specialized settings. Since 2006, the percentage of elementary students with autism accessing their education in inclusive classrooms has climbed by more than 30%, though the number of secondary students with autism in separate specialized settings has remained stable over time (Minuk et al., 2024).

It should be noted that general education teachers receive minimal special education training through initial teacher education (Mau et al., in press; McCrimmon, 2015). Rather, teachers can opt to take AQs through registered course providers after receiving their license,

which requires the completion of at least a three-year post-secondary degree and a four-term teacher education program (OCT, 2024; OME, 2024a). Primarily, teachers pursue Special Education, Part 1; Special Education, Part 2; and Special Education, Specialist, though the number of general education teachers with these qualifications is not publicly available. In 2020, Special Education, Part 1 was awarded to 4,081 teachers, Special Education, Part 2 to 1,803 teachers, and Special Education, Specialist to 1,279 teachers (OCT, 2024).

Participants and Recruitment

Phase 1: Survey

Participants consisted of general education teachers who are currently or have ever been employed by an Ontario public school board (English or French-speaking, secular or Catholic). To be included in the study, participants would have had to teach at least one secondary student (Grade 7-12) with autism within a general education classroom in their career. Both purposive and convenience sampling were used to identify potential participants (Patton, 2002), the strategies for which are described below.

In phase 1, participants (n = 124) were invited to complete an anonymized online survey, which was promoted in four ways: through (a) the Autism and Developmental Disabilities Education (Add*Ed) research group, (b) partnerships with school boards across Ontario, (c) the Ontario Secondary School Teachers' Federation (OSSTF), and (d) distributing the survey to Faculty of Education colleagues and asking them to share it with their networks. First, the Add*Ed research group promoted the survey via their electronic Listserv and newsletter, practitioner magazine, and website. Additionally, study information was displayed at Add*Ed's booth at a local event as well as a practitioner conference. At the same time, ethics applications were prepared and submitted to 15 school boards, resulting in approval from 13. This represented ~18% of boards across Ontario and all six regional offices (i.e., central, west, east, northeast,

northwest, and Toronto; OME, 2024b). Boards were selected based on existing partnerships with Add*Ed as well as region to ensure geographic spread across urban and rural areas, increasing generalizability of the study findings. Similarly, a research ethics application was submitted to and approved by OSSTF's Provincial Executive, who distributed the survey via a memo to district and bargaining unit leaders as well as their monthly newsletter. Finally, the survey was distributed to graduate students and professors at the Faculty of Education via email along with an invitation to share with their networks. The recruitment poster is presented in Appendix A. Since school principals and school board research officers were responsible for distributing the survey to teachers, and those who were sent the survey were encouraged to share it with their networks, the true response rate is unknown.

Phase 2: Think Aloud Task and Interview

Phase 2 participants were recruited at the end of the survey when they were asked to indicate interest in participating in a related follow-up study. Thus, the inclusion criteria were the same as phase 1. After indicating interest, participants ($N = 12$) were contacted to schedule a follow-up Zoom session comprised of the concurrent think aloud task and a semi-structured interview. For this phase, 12 was considered an appropriate number of participants based on Hennink and Kaiser's (2022) recommendations for reaching saturation in qualitative research, as well as studies that similarly used a combined think aloud task and interview design (e.g., Beach et al., 2021a, 2022a).

Materials

Phase 1: Survey

The anonymized survey used in phase 1 was hosted and distributed via the online platform Qualtrics (Provo, UT, 2020). The instrument combined items from two existing

instruments: Rotter's (2014) survey of general and special educators' IEP use, and Zagona et al.'s (2017) survey entitled *Teachers' Preparation to Demonstrate Skills Associated with Inclusive Education and Collaboration*. The combined instrument was then adapted for the Ontario context (e.g., using Ontario terminology), with items further refined to focus specifically on students with autism. The survey was piloted with five teachers currently teaching in Ontario who were asked to time themselves completing the survey and provide input on ease of use and readability of items. Their feedback was used to increase the clarity of the instrument.

The survey contained four sections: (a) demographic information (n = 16 items), (b) IEP access (n = 12 items), (c) IEP content (n = 20 items), and (d) IEP process (n = 16 items), for a total of 64 items with some variation in the number of items displayed depending on participants' responses. For example, if participants indicated that they only read some sections of the IEP, they were then prompted with an open-ended item asking them to indicate which sections. Demographic items were either multiple choice or open-ended, and pertained to participants' teaching experience, autism caseload, their school board location, and any relevant AQs they had undertaken (e.g., Special Education Part 1). Items related to IEP access were presented as Likert scales, multiple choice, or open-ended, and inquired about when and how participants typically gained access to IEPs, barriers to access, and suggestions for improving access (adapted from Rotter, 2014). The IEP content section of the survey contained an 18-item scale whereby participants were asked to rate the usefulness of various IEP components (e.g., accommodations; adapted from Rotter, 2014). While the scale was used to represent a single construct (i.e., usefulness), it was displayed as four sub-scales in the survey to improve accessibility: (a) general IEP components, (b) special education program components, (c) transition plan components, (d) and other components. Lastly, the IEP process section contained a 15-item scale whereby

participants were asked to rate their perceived preparation, or confidence, to carry out various responsibilities and actions associated with the IEP (adapted from Zagona et al., 2017). Similar to the usefulness scale, the preparation scale was divided into two sub-scales for accessibility: (a) inclusive education and (b) collaboration. The IEP content section contained two open-ended items, and the IEP process section contained one. The survey instrument is presented with Letter of Information and Consent Form in Appendix B.

At the end of the survey, participants were re-directed to a separate survey link where they could indicate their interest in participating in phase 2 of the study and provide their contact information. As the two surveys were not linked, participants were asked to again indicate the grade(s) and subject(s) they were currently teaching or had taught for the purpose of their participation in the think aloud task. At the request of some of the participating school boards, demographic information other than grade(s) and subject(s) assignments was not collected for phase 2. This was due to concerns about a risk to participants' privacy, or that they could potentially be identified given the smaller sample size. Additionally, some of the boards noted the demands on teachers' time, requesting that they not be asked to provide the same information twice—in the main survey, and again in the follow-up survey. The follow-up survey is presented in Appendix C.

It should be noted that school board-specific copies of the survey were created for some boards (n = 6), who requested that their external ethics review committee's contact information be included in the Letter of Information. Additionally, some school boards did not allow research incentives or requested adjustments be made to the inclusion criteria, such as requiring participants to have taught a student with autism within the last five years instead of at any point

in their career. Therefore, a total of seven copies of the survey were used to account for these variations.

Phase 2: Think Aloud Task and Interview

The concurrent think aloud task in phase 2 involved a simulated planning exercise. At the beginning of the Zoom session, participants were provided with verbal instructions for completing the task, and a secure link to a mock IEP for a fictional secondary student with autism. Specifically, participants were asked to verbalize their thoughts aloud as they viewed the IEP for 15 minutes. The IEP used in the task was created by the researcher with adaptations made based on participants' current teaching assignments (i.e., grades and courses taught). ChatGPT was used to improve the clarity of some of the language used in certain components of the IEP, such as the transition plan (OpenAI, 2024). See Appendix D for the mock IEP.

Immediately after the think aloud task, participants engaged in a semi-structured interview consisting of 15 questions developed by the researcher in consultation with experts. Specifically, a special education professor and five OCT-certified secondary teachers with knowledge of the IEP process were consulted. Questions pertained to the IEP process, the format of the IEP, the content of the IEP, and preparation to implement an IEP. An example of a process question is: Can you walk me through what you do when you typically receive a student's IEP? An example of a format question is: Would you say you read the IEP in order of how it's presented? Why or why not? An example of a content question is: Which IEP components do you spend the most time on, if any, and why? And an example of a preparation question is: Can you tell me if and how your teacher education program prepared you to use an IEP (both in general and for students with autism specifically)? There were two additional types of questions: warm-up and other. Warm-up questions included: What did you think of the think aloud task?

And other questions included*:* Is there anything else you think I should know about this topic? However, the interview guide and protocol were sufficiently flexible to allow for follow-up questions based on participants' responses and think aloud verbalizations (Rubin & Rubin, 2012). The interview guide is presented in Appendix E.

Procedures

Following distribution of the survey, respondents who indicated interest in participating in phase 2 of the study were contacted via email. Participants were then provided with a secure link to an online Letter of Information and Consent Form (see Appendix F) hosted on Qualtrics (Provo, UT, 2020), whereby they were provided with further details about the study procedures and asked to consent to the use of audio/video recording. Once completed, the researcher emailed participants to schedule a one-on-one Zoom meeting at a mutually convenient time. At the start of the Zoom session, participants were sent a secure link to a mock IEP (as described above) and given the following instructions:

> Imagine that this Grade *x* student will be joining your *y* class next week. You will be starting a new unit, so it will be an equal playing field in the sense that all students will be learning new information. Use the IEP to plan to include the student in your regular lessons.

In this scenario, *x* referred to a grade based on the participant's current teaching assignment, and *y* referred to their teachable subject. The researcher then explained the concurrent think aloud task, asking participants to continually verbalize their thoughts out loud as they viewed the IEP, with the researcher prompting during any prolonged silences (i.e., more than 20 seconds) or if participants completed the task early. In the latter instance, the prompt was based on something the participant previously said. For example, if the participant noted that they liked the transition

plan, they might be asked to return to that section and elaborate on their thoughts. Participants were told that they could do anything they typically would do while viewing an IEP in their practice, such as taking notes. Immediately following the think aloud task, participants engaged in the semi-structured interview (~30-45 minutes) for a further discussion about the IEP. Think aloud verbalizations and interviews were audio-recorded using Zoom and transcribed verbatim.

Data Preparation

Prior to analysis, data from all copies of the survey with responses (n = 5) were imported from Qualtrics (Provo, UT, 2020) to the Statistical Package for the Social Sciences (SPSS) software (Version 29, IBM, 2022). Initially, there were a total of 137 responses; however, respondents who indicated that they did not meet the inclusion criteria (i.e., answered "no" to the items asking if they currently were or had ever been an Ontario-certified teacher in a general education classroom of at least one student with autism) were removed from the dataset (n = 7). Respondents who completed some but not all of the items (i.e., incomplete cases) were retained in the data, with the exception of those who completed demographic items only (n = 6). This resulted in a total sample size of 124.

Once the data were imported into SPSS, four new variables were created. First, the two variables representing autism caseload (current and over time) were re-assigned a value between 1-5, with 1 representing 0-5 students, 2 representing 6-10 students, 3 representing 11-15 students, 4 representing 16-20 students, and 5 representing 20+ students. As these variables contained string data (i.e., open-ended responses containing both numbers and words), values were assigned manually row-by-row. In cases that were unclear (e.g., participants reported teaching "several" or "many" students without providing a precise number or range), no value was assigned, and they were excluded from analysis (n = 3 each for current and over time caseload).

In cases where responses were incompatible with the new ranges (n = 8 each for current and over time caseload), the lower value was selected to avoid overestimation in the data. For example, if a respondent wrote "between 10-20," this was classified as between 6-10 and assigned a value of 2. Therefore, 2.83% of current and 2.7% of over time caseload responses were excluded, and 7.55% of current and 7.21% of over time caseload responses were considered estimates.

Next, the transform function was used to compute two additional variables in SPSS. The first was a perceived usefulness score, representing participants' responses to all 18 items on the usefulness scale in the IEP content section of the survey. The second was a perceived preparation score, representing participants' responses to all 15 items on the preparation scale in the IEP process section of the survey. As the usefulness scale asked participants to rate the usefulness of 18 IEP components on a scale from 1-5, the perceived usefulness score was defined as a value out of 90. Since the preparation scale asked participants to rate their ability to carry out 15 actions on a scale from 1-5, the perceived preparedness score was defined as a value out of 75.

Data Analysis

Phase 1: Survey

Survey data was analyzed in SPSS using both descriptive and inferential statistics. Specifically, frequencies and percentages were calculated to summarize responses to multiple choice items and means and standard deviations were used as a measure of central tendency for the Likert-scale items. Additionally, Spearman's rank-order correlations were computed to determine if any relationships existed among demographic items (i.e., years of experience, autism caseload), perceived usefulness of IEP components, and perceived preparation to carry out IEP-related actions and responsibilities. Spearman's rho was selected given its utility with smaller sample sizes and ordinal data (Howitt & Cramer, 2014). Responses to open-ended survey

items (e.g., participants' recommendations for improving the IEP) were categorized and quantified based on commonalities.

Reliability and Validity. While the instruments used had been validated in previous studies (Rotter, 2014; Zagona et al., 2017), additional measures were taken to ensure the reliability and validity of the survey in the current research context. Specifically, the survey was piloted with five practicing teachers to enhance validity, or the extent to which the instrument adequately captured the constructs it intended to measure (Field, 2024; Taherdoost, 2016). Feedback from this pilot test helped to ensure the relevance of all items. Additionally, Cronbach's Alpha was calculated to check for internal consistency of scale items. Specifically, Cronbach's Alpha was computed for the 18-item perceived usefulness scale (Rotter, 2014) and the 15-item perceived preparation scale (Zagona et al., 2017). Ensuring inter-item correlation was particularly important to the creation of the two new score variables, which represented perceived usefulness of IEP components and perceived preparation to enact various IEP-related actions and responsibilities. The sample was 64 for the perceived usefulness scale and 113 for the perceived preparation scale. Both values indicated excellent internal consistency ($\alpha = .92$ for the perceived usefulness scale; $\alpha = .94$ for the perceived preparation scale), resulting in the retention of all items.

Phase 2: Think Aloud Task and Interview

Transcripts from the think aloud verbalizations and semi-structured interviews were analyzed thematically in NVivo Version 14 (Lumivero, 2022) using both inductive and deductive approaches to coding (Morse & Mitcham, 2002; Thomas, 2006). Specifically, think aloud transcripts were analyzed both deductively and inductively, and interview transcripts were analyzed inductively. Braun and Clarke's (2006) six-phase approach to thematic analysis was

followed, including: (a) familiarizing oneself with the data, (b) generating initial codes, (c) generating initial themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report. Additional steps were added for segmenting the data (i.e., dividing the transcript into smaller, conceptually meaningful units of text; Lincoln & Guba, 1985; O'Connor & Joffe, 2020) and codebook development (i.e., codebook thematic analysis; Braun & Clarke, 2013, 2021a, 2021b, 2023). The approach to codebook development was also used to address the issue of intercoder agreement. The steps of thematic analysis are detailed below.

Becoming Familiar with the Data. To begin, the researcher became immersed in the data through the process of transcribing, and then repeated and reflective reading (Braun & Clarke, 2006). This entailed reading all of the transcripts from the think aloud task and interviews in their entirety before beginning coding. Notes were taken in a separate document to shape ideas about the identification of potential patterns as well as early considerations in the search for semantic (i.e., descriptive) or latent (i.e., interpretive) themes (Braun & Clarke, 2006, 2019; Byrne, 2022; Campbell et al., 2021).

Segmenting the Data. Only the researcher segmented the transcripts as, according to Campbell et al. (2013), the person most familiar with the data is best equipped to determine the location of "meaningful conceptual breaks" (p. 304) in the text. The researcher listened to the audio recordings of each transcript while completing the segmenting, carefully listening for meaningful pauses and/or transitions in participants' verbalizations (Krippendorff, 2018). Examples of thought units from the think aloud task included "Yeah, student/parent consultation looks pretty standard" and "I see that they are diagnosed with autism, which is like a lot of my students right now." Examples of thought units from the interviews included, "I find it's bogged down by like a lot of student contact information and things like that, so I just skip a lot of that

stuff" and "I love the three different types of accommodations." For the think aloud task, this process resulted in a total of 814 thought units across participants, for an average of 67 thought units per participant. For the interviews, it resulted in 912 thought units across participants, and an average of 76 per participant.

Generating Initial Codes. Codes were generated in two ways: first, through the development and application of a deductive coding scheme based on Beach and Willows (2017) and Krathwohl's (2002) respective lists of cognitive processes; then, using an inductive approach to open coding (Thomas, 2006). As such, codes were both semantic and latent, with the goal of developing themes that would both describe and interpret the data (Braun & Clarke, 2006; Byrne, 2022). The deductive coding scheme was used to code the think aloud data alone, whereas the inductive coding scheme was used to code both the think aloud and interview data. The approach to developing both coding schemes is detailed below as part of codebook thematic analysis. The deductive and inductive codebooks containing definitions and examples are presented in Appendices H and I.

Codebook Thematic Analysis. This research adopted a codebook thematic analysis approach to both develop the coding schemes and address the issue of intercoder agreement (Braun & Clarke, 2021a, 2021b, 2022). There is considerable debate over the utility of intercoder agreement in qualitative research (e.g., Braun & Clarke, 2013, 2021a, 2021b, 2022, 2023; Feng, 2014; MacPhail et al., 2016; Rose & Johnson, 2020). O'Connor and Joffe (2020) caution against using summary statistics to convey reliability while Halpin (2024) recommends different tests based on the nature and amount of data collected. Given that traditional approaches to reliability are considered less feasible and desirable in qualitative research (Rose & Johnson, 2020), the researcher opted to use Braun and Clarke's (2021a, 2021b, 2022, 2023) approach to codebook

thematic analysis, which broadly refers to a cluster of methods for collaboratively developing a coding scheme and documenting the analysis process.

According to Braun and Clarke (2022), codebook thematic analysis is considered a compromise that sits "somewhere between the coding reliability and reflexive ends of the thematic analysis spectrum" (p. 12). The coding reliability approach is aligned with a post-positivist paradigm and based on the assumption that biases can be controlled and eliminated (Braun & Clarke, 2022; Byrne, 2022). However, this conflicts with the premise of qualitative research whereby researcher subjectivity is considered part of knowledge construction (Braun & Clarke, 2021b). On the other hand, in reflexive thematic analysis, coding is recognized as an inherently subjective process whereby themes cannot be separated from the researcher (Braun & Clarke, 2020). As this study utilized codebook thematic analysis, some of the more structured elements of coding reliability were combined with the core values of reflexive analysis, with the goal of developing and documenting the approach without relying on summary statistics as a quality indicator (Braun & Clarke, 2021b).

Development of the Deductive Coding Scheme. For the deductive coding scheme, the researcher began by combining Krathwohl's (2002) cognitive process categories with Beach and Willows' (2017) list of cognitive processes. While Krathwohl's (2002) framework is widely considered comprehensive, it was supplemented with Beach and Willows' (2017) list given its relevance to the research context (e.g., teachers completing a think aloud task in a virtual environment). Once combined, the researcher re-organized the list into higher and lower order cognitive processes, recognizing that this distinction is not necessarily clear for some categories (e.g., understanding; Anderson, 1999; Krathwohl, 2002). The researcher then examined the combined list for areas of overlap, re-organizing categories based on the research, revising

definitions as appropriate, and eliminating redundancies. The final list contained ten codes for cognitive processes: (a) diversion, (b) reading, (c) describing, (d) understanding, (e) connecting, (f) reflecting, (g) reasoning, (h) analyzing, (i) evaluating, and (j) planning (Beach & Willows, 2017; Krathwohl, 2002). See the codebook in Appendix H for definitions and examples.

Deductive Coding. The researcher and research supervisor met to discuss the deductive coding scheme and conduct training on its use—a practice aligned with coding reliability (O'Connor & Joffe, 2020). This entailed reading data segments together, discussing appropriate codes, and clarifying definitions in the codebook as appropriate. Following training, both coders independently coded the same three transcripts, representing 25% of the think aloud data. The researchers then met to review the codes, highlighting and discussing discrepancies. This information was used to update and improve the clarity of the codebook and allowed the coders to resolve discrepancies through discussion. The researcher then used the deductive codebook to code the remaining think aloud transcripts.

Inductive Coding. The researcher and supervisor adopted a similar approach for the interview data; however, this time, codes were determined inductively. Rather than starting with an existing coding frame, the coders reviewed the same interview transcript independently, noting ideas next to each data segment (O'Connor & Joffe, 2020). Keeping with codebook thematic analysis, the purpose of this exercise was to promote reflexivity and dialogue rather than objectivity (Braun & Clarke, 2021a, 2021b, 2022; Johnson & Parry, 2015; O'Connor & Joffe, 2020). The researchers compared notes and refined conceptualizations and categorizations as needed but ultimately found their ideas about the data to have considerable overlap. The inductive coding frame was constructed accordingly, complete with definitions and examples (see Appendix I). The researcher used this to independently code the remaining interview

transcripts. The inductive coding scheme was then applied to the think aloud data to further characterize participants' verbalizations before codes were re-conceptualized into themes.

Generating Initial Themes. Once the data was coded using the coding schemes described above, the lists of deductive and inductive codes were sorted into potential themes as part of the broader analysis (Braun & Clarke, 2006, 2019). This entailed reviewing relevant data segments associated with each code and drafting thematic maps in NVivo to explore the relationships between codes and sub-codes within each coding scheme (Braun & Clarke, 2006; Byrne, 2022; Campbell et al., 2021). Appendix J presents what Braun and Clarke (2006) describe as an initial thematic map for the deductive coding scheme, and Appendix K presents an initial thematic map for the inductive coding scheme.

At this stage, the initial themes were based on the data and, in the case of the deductive map, drew on findings from related research (i.e., Beach et al., 2020, 2021a, 2022a). The inductive map can be considered to have an additional "layer" in that themes were first organized according to general topic (i.e., perceptions of the IEP, perceived preparation to implement an IEP, and planning to implement an IEP). The original list of inductive codes was refined through this process, meaning that not all codes from the coding scheme made it into the initial thematic map. However, the complete codebook is presented in Appendix I to adequately capture each stage of analysis. Data visualization enabled codes to be moved and manipulated into corresponding themes, leading to decisions about those that were most salient (Byrne, 2022; Campbell et al., 2021).

Reviewing Themes. Following the generation of initial themes and thematic mapping, the set of themes was refined. Specifically, each candidate theme was examined to ensure there was sufficient data to support it, and that no two themes could be collapsed into one (Braun &

Clarke, 2006, 2019). Themes were judged according to two criteria: internal homogeneity and external homogeneity (Patton, 1990, 2002, 2014). According to Patton, internal homogeneity is the extent to which the data within a given theme relate to each other, whereas external homogeneity is the extent to which differences between themes are clear.

Thematic review then proceeded at two levels (Campbell et al., 2021). First, coded excerpts were re-read relative to the themes, examining how well they fit the data (Braun & Clarke, 2006). In instances where a candidate theme did not appear to fit, either the theme was revised to better reflect the data or, if appropriate, the coded excerpts in question were moved to a more suitable location. Next, the appropriateness of the themes was considered relative to the entire dataset (Braun & Clarke, 2006, 2019; Campbell et al., 2021). This refinement resulted in the development of the thematic maps presented in Appendices J and K.

In the refined deductive map, two of the initial themes were retained (i.e., metacognitive awareness and evaluating); two were combined (i.e., "light" and "deep" engagement), and one was re-framed (i.e., active planning). In the refined inductive map, the additional "layer" or the general categories organizing the themes (i.e., perceptions of the IEP, perceived preparation to implement an IEP, and planning to implement an IEP) was removed. This is because they were no longer deemed necessary with fewer components to navigate on the map. Rather, each category was divided into two distinct but related themes. For perceptions of the IEP, these were usefulness, and shortcomings and challenges; for perceived preparation to implement an IEP, these were teacher characteristics and resource engagement; and for planning to implement an IEP, these were contextual and practical knowledge. At this stage, remaining codes with a small number of excerpts coded to them were amalgamated with others or moved around as appropriate, resulting in further refinement of the maps.

Defining and Naming Themes. The names and definitions of each theme were refined at this point, ensuring they captured the "essence" or true meaning of each one (Braun & Clarke, 2006, 2013). At this stage, a detailed description of each theme was produced, complete with exemplars to illustrate them (Scharp & Sanders, 2019). Theme names were subjected to a final review with the aim of ensuring they immediately conveyed their intended meaning (Braun & Clarke, 2006, 2013; Byrne, 2022). The final list of themes with definitions and exemplars are presented in the results.

Producing the Report. Lastly, producing the report entailed writing up each theme with sufficient evidence and examples (Braun & Clarke, 2006). According to Campbell et al. (2021), the write-up of themes should extend beyond a simple description of the data. Rather, it should provide a compelling case in response to the original research questions (Campbell et al., 2021). Given the recursive and reflexive nature of qualitative research (Braun & Clarke, 2013; Byrne, 2022) and the reality of writing a dissertation, the boundaries between this and the previous phases were sometimes blurred. However, keeping with the approach to thematic codebook analysis, changes were well-documented (Byrne, 2022) and reporting was updated accordingly. The write-up for each theme is presented in the results section along with other study findings.

Trustworthiness

Efforts to increase trustworthiness were made throughout the research process. Strategies were selected that aligned with Lincoln and Guba's (1985) criteria of credibility, transferability, dependability, and confirmability. In this study, credibility was established through triangulation and negative case analysis, transferability through thick descriptions, dependability through an audit trail, and confirmability through triangulation and an audit trail.

Credibility. First, to establish credibility, or confidence in the data and interpretations of them, triangulation was used (Lincoln & Guba, 1985). According to Rose and Johnson (2020), triangulation refers to "addressing a phenomenon from multiple directions" (p. 441). This study used both method triangulation (i.e., using multiple methods to study the same phenomena) and data triangulation (i.e., drawing on multiple sources of data across different times) to achieve this aim (Alexander, 2019; Noble & Smith, 2015). Not only were data collected in three different ways (i.e., survey, think aloud task, and interview), meeting the criteria for method triangulation, since all think aloud task and interview participants engaged in both phases 1 and 2 of the study, data were also collected at different points in time, supporting data triangulation. Moreover, method triangulation was used to ensure topics were examined from a variety of angles. For example, in the think aloud task, participants verbalized their thoughts as they moved from one section of the IEP to another, and in the interview, participants were asked to elaborate upon or explain the order in which they viewed the IEP.

Transferability. Transferability refers to the extent to which the research can be applied in other contexts (Lincoln & Guba, 1985). While this can involve some generalization, this should not be confused with generalizability in quantitative research, where the aim is to increase the replicability of study findings (Onwuegbuzie & Leech, 2009). Rather, according to Drisko (2025), transferability refers to the process of "applying information from specific persons, settings, and eras to others that have not been directly studied" (p. 103). In this study, this was primarily achieved through the use of thick descriptions (Alexander, 2019). For a description to be thick, a substantial amount of detail must be provided about the participants, research context, or methods (Drisko, 2025). Such descriptions enable readers to evaluate the extent to which the study findings and interpretations apply to other contexts (Lincoln & Guba, 1985). Specifically,

in this chapter, substantial details are provided about the research context and approaches to data collection and analysis. In addition to providing readers with the study instruments and a detailed breakdown of how they were used, the appendices feature analysis tools such as the codebooks and thematic maps, facilitating potential transfers of the study to other settings.

Dependability. To enhance dependability, or the consistency of the findings (Lincoln & Guba, 1985), an audit trail was used. In qualitative research, an audit trail refers to the careful tracking of all theoretical, methodological, and analytical decisions (Carcary, 2020). This involves continually cross-checking data from multiple sources as well as one's own notes and memos throughout the research process, documenting how thinking evolves (Anney, 2015). Given the nature of writing a dissertation, where all steps of the research process must be rigorously recorded, several examples from the audit trail are presented throughout this work. As an example, for the deductive and inductive analyses, the codebooks, thematic maps, and lists of themes are all presented to ensure the evolution of analysis is clearly conveyed.

Confirmability. Confirmability refers to the relative objectivity of the research, or the extent to which the findings stem from the data rather than the researcher (Anney, 2015). As qualitative research is inherently subjective in nature, it is important to note that confirmability does not mean eliminating bias (Braun & Clarke, 2020; Braun & Clarke, 2022; Byrne, 2022) or simply acknowledging positionality (Savolainen et al., 2023). Rather, triangulation and the audit trail were also used as strategies to enhance confirmability. This time, triangulation was the in the form of searching for disconfirming cases, or negative case analysis (Rose & Johnson, 2020). To achieve this aim, recruitment continued until diverse perspectives were gathered on several dimensions of the research. For example, participants reported differences in terms of when and how they accessed students' IEPs, their beliefs about their

preparation to use an IEP, and whether or not they believed the IEP to be presented effectively. Mapping these different perspectives supported reflexivity throughout the research process, allowing the researcher to interrogate existing assumptions and subjectivities colouring interpretation (Miller et al., 2015; Stuart, 2017). For the audit trail, as outlined in the description of dependability above, all steps of data collection and analysis were documented and presented throughout the dissertation. Readers can use the materials provided (e.g., instruments, codebooks, thematic maps, and lists of themes) to draw conclusions about confirmability (Alexander, 2019).

Ethics

This study was reviewed by the General Research Ethics Board (GREB) at Queen's University (see Appendix G) and complied with the tri-council policy statement on ethical conduct for research (Government of Canada, 2022). It also received approval from 13 school boards across Ontario as well as OSSTF's Provincial Executive. At the request of some school boards, a list of participating boards is not provided to further protect participant anonymity. Participants provided informed consent prior to participating in both phases of the study. Participants also received detailed letters of information (see Appendices B and F) outlining the researcher's responsibilities for the ethical conduct of research.

Chapter 4: Results

Organization of Chapter

First, demographic information is summarized for phase 1 (survey) and then phase 2 (think aloud task and interview) participants. Next, general survey findings are presented pertaining to IEP access, followed by a broad overview of the themes from both the inductive and deductive analyses. The remainder of the chapter is organized according to research question, with relevant survey findings and descriptions of individual themes integrated throughout. The research questions that are addressed are: (1) What are general education teachers' perceptions of the IEP for secondary students with autism in inclusive classrooms? (2) How do general education teachers perceive their preparation to implement an IEP for secondary students with autism in inclusive classrooms? (3) What relationships, if any, exist between general education teachers' demographic characteristics (e.g., years of experience), perceptions of the IEP, and preparation to implement it for secondary students with autism in inclusive classrooms? And (4) How do general education teachers use IEPs in their planning to support secondary students with autism in inclusive classrooms? Themes from the inductive analysis are described in response to the first, second, and final research questions, and themes from the deductive analysis are described in response to the final research question only. The chapter concludes with the presentation of a conceptual model for understanding how teachers use the IEP in their instructional planning to support the inclusion of secondary students with autism in general education classrooms.

Demographic Information

Phase 1: Survey

The majority of survey respondents (*n* = 112; 90.3%) reported that they were currently an Ontario-certified teacher of at least one secondary-aged student with autism in a general education classroom in an Ontario public school, with the remainder (*n* = 12; 9.7%) reporting that they had once met this criteria, meaning they were either in a different role or retired at the time of data collection. More than half of participants (*n* = 73; 58.9%) described the location of their school board as a large urban population centre (100,000 residents or greater). This was followed in frequency by small population centres (1,000-29,000 residents; *n* = 26; 21%), medium population centres (30,000-99,000 residents; *n* = 19; 15.3%), and rural population centres (less than 1,000 residents; *n* = 6; 4.8%).

The grade(s) and subject(s) participants reported teaching or being qualified to teach are presented in Table 4.1. While participants were able to indicate multiple grades and subjects, the majority indicated that they taught Grade 10 (*n* = 103; 83.1%) and/or 11 (*n* = 100; 80.7%), and a subject other than the listed options (*n* = 51; 41.1%). Examples of other subjects included library, religion, and family studies, but for the most part, participants selected this option and used the open-ended text to indicate that they had at least one special education class on their timetable or had a part-time role as an itinerant or Special Education Resource Teacher (SERT). Otherwise, the most common courses among participants were mathematics (*n* = 27; 21.8%), English (*n* = 26; 21%), and guidance and career education (*n* = 26; 21%). It should be noted that the only subject not represented among respondents was Indigenous languages.

Table 4.1 *Phase 1 Participants' Grade(s) and Subject(s)*

Grade(s)	N (%)
Grade 7	4 (3.2)
Grade 8	4 (3.2)

Grade 9	98 (79)
Grade 10	103 (83.1)
Grade 11	100 (80.7)
Grade 12	97 (78.2)
Subject(s)	N (%)
The arts	12 (9.7)
Business studies	1 (.8)
Canadian and world studies	21 (16.9)
Classical studies and international languages	1 (.8)
Computer studies	5 (4)
Cooperative education	5 (4)
English	26 (21)
English as a second language	3 (2.4)
First Nations, Metis, and Inuit studies	5 (4)
French as a second language	7 (5.7)
Guidance and career education	26 (21)
Health and physical education	4 (3.2)
Mathematics	27 (21.8)
Sciences	18 (14.5)
Social sciences and humanities	22 (17.7)
Technological education	9 (7.3)
Other	51 (41.1)

There was a wide range in terms of the amount of teaching experience participants reported having, both in general and for students with autism (see Table 4.2). However, while the greatest proportion of participants reported 20+ years of teaching experience in general (*n* = 36; 29.3%), most reported between 0-5 (*n* = 33; 26.6%) or 6-10 (*n* = 35; 28.2%) years of experience teaching students with autism. As for autism caseload, or the number of students with autism that participants were currently teaching or had taught over time, these were originally open-ended items with variation in how responses were characterized. For example, some participants provided a range (e.g., "5-7 students") while others added context (e.g., "approximately 5-10 per semester"). Some indicated that they taught specialized classes in the past or held a part-time SERT role as part of their contract, explaining why their caseload might be higher (e.g., "I have taught autism community classes for years"). As outlined in the previous chapter, the data was re-coded to use the same ranges as years of experience. More than half of respondents to this item indicated that they were currently teaching between 0-5 students with autism (*n* = 56; 52.8%), followed in frequency by those teaching between 6-10 (*n* = 25; 23.6%). However, more than half of respondents (*n* = 63; 56.8%) indicated that they had taught more than 20 students with autism over time. A summary of the re-coded caseload data is provided in Table 4.2 below.

Table 4.2

Phase 1 Participants' Teaching Experience and Autism Caseload

		N (%)				
	N	0-5	6-10	11-15	16-20	20+
Teaching Experience (Years)						
General	123	27 (22)	18 (14.6)	16 (13)	26 (21.1)	36 (29.3)
Autism	124	33 (26.6)	35 (28.2)	14 (11.3)	25 (20.2)	17 (13.7)

Autism Caseload (Students)						
Current	106	56 (52.8)	25 (23.6)	9 (8.5)	2 (1.9)	14 (13.2)
Over Time	111	14 (12.6)	15 (13.5)	10 (9)	9 (8.1)	63 (56.8)

Lastly, in terms of training, 33 participants (26.6%) reported that they had taken Special Education Part 1, 8 (6.5%) reported that they had taken Special Education Part 2, and 49 (39.5%) reported that they had completed the three-part Special Education Specialist. Participants also reported accessing the following AQs: Equitable and Inclusive Classrooms Part 1 (n = 5; 4%), Teaching Students with Communication Needs (Autism Spectrum Disorder; n = 19, 15.3%), Teaching Students with Behavioural Needs (n = 13; 10.5%), Teaching Students with Intellectual Needs (Developmental Disability; n = 10; 8.1%), and Use and Knowledge of Assistive Technology, (n = 12; 9.7%). In response to the open-ended item asking if participants had taken any other relevant AQs, Teaching Students with Communication Needs (Learning Disability), Principal Part 1, Reading Part 1, and Guidance Specialist were among those listed. Moreover, 21 participants (16.9%) reported having a Master of Education, 7 (5.7%) had a post-graduate certificate in special education, and 24 (19.4%) had additional degrees or certifications, such as a Master of Arts.

Phase 2: Think Aloud Task and Interview

As noted in the previous chapter, due to some school boards' concerns about privacy and demands on teachers' time, phase 2 participants were not asked to complete a demographic survey as they had already provided their demographic information in phase 1. As the phase 1 and 2 data were not linked, only limited demographic information about phase 2 participants can be provided. Participants did, however, indicate the grade(s) and subject(s) they taught for the purpose of adapting the mock IEP used in the think aloud task to their teaching contexts. The

sample is described in Table 4.3. It should also be noted that 9 out of 12 participants (75%) reported during the Zoom session that they had at least one year of experience as either a SERT, teacher in a specialized program (e.g., a fully self-contained autism classroom), inclusion specialist, or guidance counsellor.

Table 4.3

Phase 2 Sample Description

Participant ID	Grade(s) Assignment	Subject(s) Assignment
P001	9, 10	French as a Second Language
P002	9-12	Science
P003	9-12	English
P004	9-11	Math
P005	9-12	The Arts; English; First Nations, Metis, and Inuit Studies
P006	10, 12	Canadian and World Studies; Social Sciences and Humanities
P007	9-12	Guidance and Career Education
P008	9-12	Math, Science
P009	9-12	Guidance and Career Education; International Languages
P010	9-12	Other (General Learning Strategies)
P011	9-12	English
P012	10-11	English, Guidance and Career Education

General Survey Findings

General findings pertaining to participants' IEP access are summarized in Table 4.4. More than half of participants (*n* = 75; 60.5% altogether) reported that they first received a student's IEPs after the school year had already begun. Of this group, 44 (35.5%) indicated that this happened a few days into the school year, 30 (24.2%) indicated this was a few weeks into the school year, and 1 (<1%) indicated this was a few months into the school year. Approximately one quarter of participants (*n* = 32; 25.8% altogether) reported receiving the IEP before the school year began, with the majority of this group (*n* = 24; 19.4) indicating that this happened a few days in advance rather than those reporting receipt weeks (*n* = 6; 4.8%) or months (*n* = 2; 1.6%) prior. For participants who indicated "other" (*n* = 17; 13.7%), examples of open-ended responses included "variable" and "if Grade 9, can take longer to receive."

Participants most often reported that they access IEPs via a school board-specific website (*n* = 48; 38.7%) or software (*n* = 45; 36.3%). While few participants indicated that they received a hard copy (*n* = 4; 3.2% altogether), 24 participants (19.4%) used the "other" option to add context such as "hard copy from SERT and electronic copy accessed through the website." Once received, the majority of participants reported accessing IEPs within days (*n* = 100; 80.7%), with fewer than 5% (*n* = 6) reporting that they did not access it at all. A majority of participants reported that they found the IEP to be either very easy to access (*n* = 50; 40.3%) or somewhat easy to access (*n* = 32; 25.8%).

While almost half of participants (*n* = 57; 46.3%) reported reading IEPs in full, an equal number reported that they either skimmed it for important information (*n* = 28; 22.8%) or reviewed specific sections (*n* = 29; 23.4%). Nine participants (7.3%) provided additional context for their responses, such as "after reading it, I take it to our Student Success Team for highlights

on each student." Of the 29 participants who indicated reviewing specific sections, 26 of them responded to the open-ended item asking which sections. While there was variation in responses, accommodations came up most frequently (*n* = 20), followed by assessments (*n* = 10), and strengths and weaknesses (*n* = 6). Almost half of all participants reported that they reviewed the IEP at least once per month (*n* = 55; 45.5%), followed in frequency by those who reviewed it less than once per month but more than once a semester (*n* = 48; 39.7%).

Lastly, participants were asked to report the frequency of their note-taking relative to the IEP. More than three quarters (*n* = 107; 87.7%) indicated that they took notes on the IEP. Most reported that they only took notes sometimes (*n* = 46; 37.7%), followed in frequency by those who reported taking notes always (*n* = 28; 23%) or most of the time (*n* = 27; 22.1%). Most participants indicated that they took notes by hand, either on a separate sheet of paper *(n* = 32; 29.9) or on the IEP itself (*n* =19; 17.8%). Of the 11 participants who chose the "other" option, some added context such as "I include notes on a printed class list" or indicated that they created their own tracker, typically in the form of a spreadsheet. More than half of participants (*n* = 67; 63.8% altogether) reported that they referred back to their notes at least once a month (*n* = 44; 41.9%) or once a week (*n* = 23; 21.9%). See Table 4.4.

Table 4.4

Frequency of Participants' Responses Pertaining to General IEP Access

Question	N (%)
When do you typically receive a student's IEP?	124
A few months before a new school year	2 (1.6)
A few weeks before a new school year	6 (4.8)
A few days before a new school year	24 (19.4)

A few days into a new school year	44 (35.5)
A few weeks into a new school year	30 (24.2)
A few months into a new school year	1 (.8)
Other	17 (13.7)
How do you typically receive a student's IEP?	124
I receive an electronic copy that I can access using software	45 (36.3)
I receive an electronic copy that I can access using a website	48 (38.7)
I receive an electronic copy by email	3 (2.4)
Someone at my school delivers a hard copy to me	1 (.8)
Someone at my school has a hard copy, which I collect from them	3 (2.4)
Other	24 (19.4)
On a scale from 1 (very easy) to 5 (very difficult), please rate how easy you find it to access a student's IEP in your school.	124
Very easy	50 (40.3)
Somewhat easy	32 (25.8)
Neither easy nor difficult	17 (13.7)
Somewhat difficult	23 (18.6)
Very difficult	2 (1.6)
How long after receiving a student's IEP do you typically access it?	124
Within days	100 (80.7)
Within a week or two	16 (12.9)
When I feel I need it (e.g., in preparation for a meeting, when I have a question about the student, etc.)	7 (5.7)

I do not access it	6 (4.8)
Once you access the IEP, what do you typically do?	123
I read it in full	57 (46.3)
I skim it for important information	28 (22.8)
I review specific sections	29 (23.4)
Other	9 (7.3)
How often do you typically refer back to a student's IEP throughout the school year?	121
Once a week or more	10 (8.3)
Once a month or more	55 (45.5)
Less than once a month but at least once a semester	48 (39.7)
Less than once a semester but at least once more in a school year	2 (1.7)
Not until I'm preparing for a relevant meeting	6 (5)
How often do you take notes on a student's IEP?	122
Never	15 (12.3)
Sometimes	46 (37.7)
About half the time	6 (4.9)
Most of the time	27 (22.13)
Always	28 (23)
How do you typically take notes on a student's IEP?	107
I type my notes in a separate document	45 (42.1)
I take notes by hand on a separate piece of paper	32 (29.9)
I take notes by hand on a printed copy of the IEP	19 (17.8)

Other	11 (10.3)
How frequently do you refer back to your notes on a student's IEP?	105
Once a week or more	23 (21.9)
Once a month or more	44 (41.9)
Less than once a month but at least once a semester	30 (28.6)
Less than once a semester but at least once more in the school year	3 (2.4)
Not until I'm preparing for a relevant meeting	5 (4)

In response to the open-ended item asking about any barriers to accessing the IEP and its information, almost all participants provided a response (n = 115; 92.7%). Open-ended responses were organized into the following categories: (a) software or technical issues, (b) delays in access, (c) lack of time or capacity, (d) lack of understanding, (e) difficulties with language, (f) concerns about relevance, (g) volume of information, (h) lack of training, and (i) lack of confidence. Software or technical issues were the most commonly cited barrier (n = 47), and lack of confidence the least (n = 2). The frequency of each category and examples of responses are provided in Table 4.5.

Table 4.5

Barriers to Accessing the IEP and Its Information

Barriers	N	Example
Software or technical issues	47	"The drop-down menus for selecting accommodations make it difficult to know what really has worked well for students, what they like to use and what is absolutely necessary for their success."

Delays in access	22	"Master lists of students' IEPs are often not shared until several weeks or months into the school year, and until then I need to actively seek out IEPs one by one which is very inefficient."
Lack of time or capacity	15	"Time needed but is limited due to increased pressure in the classroom and downloaded work from board admin."
Lack of understanding	11	"Not all teachers understand how to read the IEP fully. Refreshers/a ready document explaining acronyms and how to read it would be helpful, especially teachers who don't often teach students with IEPs."
Difficulties with language used	7	"The language. It was not until after Teachers' college [TC] that I actually learned about what each section of an IEP was for and what certain terms/ideas meant. It was taught during TC, but was not done in a way that was conducive to actually applying the IEP."
Concerns about relevance	7	"Much of the information seems irrelevant at the high school level."
Volume of information	5	"If the format was less intensive (maybe more concise).
Lack of training	4	Lack of training to find it and read it."
Lack of confidence	2	"I think another barrier is that I am not always confident that I know specifically what each part means (I am a recent B. Ed. graduate and I don't think my program had enough time dedicated to learning about spec. ed)."

A similar number of participants (*n* = 104; 83.9%) responded to the open-ended item asking for suggestions to improve access to the IEP and its information. Open-ended responses were reviewed and organized into the following categories: (a) reduce or simplify the amount of information in the IEP, (b) change means of access to the IEP, (c) highlight or re-order important information, (d) improve individualization, (e) link to additional information and resources, (f) summarize information, (g) standardize across school boards, and (h) increase student input. As shown in Table 4.6, participants' suggestions most frequently pertained to reducing or simplifying the amount of information in the IEP (*n* = 18). Other responses that did not fit within the categories included keeping the first page blank to protect student privacy, making it mandatory to meet with the SERT to review IEPs after receiving them, and focusing more on student strengths than needs.

Table 4.6

Suggestions for Improving Access to the IEP and Its Information

Suggestions	N	Example
Reduce or simplify the amount of information	18	"Maybe making a condensed portable version without all the signature pages and individual test results."
Change means of access	16	"It would be helpful to have the IEPs linked directly into our 'main' program where teachers log in every day for attendance, student information etc."
Highlight or re-order important information	12	"Having it contain the most relevant information for teachers (maybe putting accommodations on the first page)."

Improve individualization	7	"The accommodations are too vague. For example, an IEP might say 'additional time for assessments', but different students need it for different reasons. Knowing the reason would help in my approach to that assessment for that student."
Link to additional information and resources	6	"It would be nice if there were hyperlinks that included additional information (perhaps including information about the different educational assessments and what they are, or links to the ILP), rather than having to click around for the student's different files."
Summarize information	6	"A quick "learner profile" summary free of all the legal babble would make it quicker and easier for classroom teachers to access the pertinent knowledge they need quickly and efficiently."
Standardize across school boards	3	"Make it standardized across the province so that when students change school boards the electronic IEP can be directly transferred to the receiving school."
Increase student input	3	"Something that means more to the student. Something more holistic or approachable for the team working around the student. Student friendly language. Specifics to the school. Phrases the student can use to advocate for themselves."

Overview of Themes

Inductive Analysis

The inductive analysis of the think aloud and interview data resulted in the construction of six main themes: (a) utility and clarity of IEP content, (b) challenges associated with IEP engagement, (c) the influence of teacher characteristics on IEP engagement, (d) using resources to expand understanding, (e) considering the IEP in context, and (f) reflecting on practical knowledge. Descriptions of each theme are provided in Table 4.7 with examples from either the think aloud or interview transcripts. Themes from the inductive analysis are also elaborated upon in response to the relevant research questions. Specifically, the first and second themes are described in response to the first research question related to teachers' perceptions of the IEP, the third and fourth in response to the second research question related to teachers' perceptions of their preparation to implement an IEP, and the fifth and sixth in response to the final research question related to teachers' use of the IEP in their instructional planning.

Table 4.7

Themes from the Inductive Analysis

Theme	Description	Exemplar
Utility and clarity of IEP content	This theme includes participants' reflections about the various components of the IEP, including what they perceive to be useful, not useful, confusing or unfamiliar, or irrelevant to their role.	"But I think the transition plan is something that I don't spend as much time on in terms of like I'm thinking about, that's in the hands of the head of special ed, and very rarely am I involved in any of the decisions that are made within that framework. I really keep my focus on what can I do in the classroom to support this student."
Challenges associated with IEP engagement	In addition to general reflections on the shortcomings of the IEP, this theme examines reasons that teachers' engagement with the IEP may be more limited. This includes challenges specific to implementation, inadequate access to relevant training, and key differences between the elementary and secondary panels that teachers must navigate.	"The reality in a high school environment when a teacher's got 75 to 90 students is that that little comment, 'some delays in personal care and fine motor skills' might get lost in actually going to the OSR to look up what that means."

The influence of teacher characteristics on IEP engagement	This theme provides a commentary about how teachers' background, training, and experience can influence their approach to the IEP. This includes participants' current or past teaching assignments, ideas about their initial teacher education, and any other personal or professional experiences that have helped them prepare to implement an IEP or support students with autism in their practice.	"I did my phys. ed. specialist, and I got a little bit of work in there with just how would you make plans and treat kids who are different, and how would you meet them? There was a little bit more of kind of inclusion in there that I kind of got sprinkled in that I would say that was a little bit more of something that not everyone has access to."
Using resources to expand understanding	This theme encompasses references to teachers' engagement with different resources to build their knowledge relative to the IEP or autism. These include human resources (e.g., SERT); school, school board, or province-level resources (e.g., policy documents); or outside resources, such as online or print sources (e.g., books).	"If I've taken a course, I might go back to my course content and review some of the notes I made from the course and see if there's anything that could be useful."

Considering the IEP in context	This theme includes reflections on contextual knowledge, such as relevant school or school board practices, classroom routines and resources, and individual student needs.	"And then with my high school, we don't have any modified besides our specialized program. Any mainstream students are only receiving accommodations at my school."
Reflecting on practical knowledge	This theme encompasses participants' reflections on their knowledge of their curricular subject(s), autism, and UDL and inclusive practice. This theme also includes participants' identification of any gaps in their knowledge, such as wanting to know more about a given aspect of the IEP.	"Kind of in the second, third week of school, there'll be a week when you can go and speak with the LPS teachers and go through your class list. So that's also a way to get IEP information, but also kind of the insider take that doesn't make it onto the paperwork."

Deductive Analysis

The deductive analysis of the think aloud transcripts resulted in the generation of four main themes: (a) engagement behaviours, (b) metacognitive awareness, (c) evaluating, and (d) connecting to practice. Descriptions of each theme and exemplars from the think aloud transcripts are provided in Table 4.8 below. Themes from the deductive analysis are also elaborated upon in response to the fourth research question related to how teachers use the IEP in their instructional planning to support secondary students with autism in general education classrooms.

Table 4.8

Themes from the Deductive Analysis

Theme	Description	Exemplar
Engagement behaviours	This theme includes participants' engagement in both lower (e.g., reading) and higher (e.g., analyzing) order cognitive processes while viewing the IEP. This includes explaining the information provided in one's own words, summarizing it using more concise language, or making inferences based on the individual sections or the document as a whole.	"So that also tells me a great deal in terms of ability, and where they're established within the school system."
Metacognitive awareness	This theme encompasses statements that demonstrate awareness of one's thinking, including the use of metacognitive strategies to monitor one's thoughts. This includes reflecting on one's thought processes and the reasoning or rationale underpinning them.	"This part here, I pay attention a little bit especially in terms of like the literacy test, if they're exempt from or not, because that kind of impacts what we do in English, if we need to focus on that kind of thing."

Evaluating	This theme includes participants' expressions of positive or negative feelings about either the usability and/or accessibility of the IEP document itself (i.e., features and format), or the quality and/or quantity of the IEP content.	"I kind of like how in the reading assessment summary it says what the difficulties are and then in brackets it says rhythm and intonation of speech when reading aloud. Like, that's the stuff that teachers need to understand."
Connecting to practice	This theme includes participants' connections to both past and future practice by activating prior knowledge relative to autism or the IEP, making comparisons to one's own teaching context, drawing on examples from one's own practice, or using the information to actively create or revise instructional plans.	"Chromebook. Okay. I don't often have too many issues as a math teacher with the kids needing a Chromebook for that class, but definitely making sure that the student has access to it when we're doing independent work. I keep a lot of notes online so I'd want to make sure that student is readily able to access those and knows where to find them."

Research Question 1: Teachers' Perceptions of the IEP

Phase 1: Survey

Participants were asked to rate the usefulness of various IEP components on a scale between 1-5 (1 = not useful; 5 = extremely useful). Items were clustered into four groups to increase accessibility of the instrument: (a) general IEP components, (b) special education program components, (c) transition plan components, and (d) other components. Overall, participants perceived the accommodations (M = 4.3; SD = .9) and strengths and needs (M = 4; SD = .9) sections of the IEP to be the most useful, and the provincial assessments (M = 2.4; SD = 1.5) and human resources (M = 2.3; SD = 1.2) sections to be the least useful (see Table 4.9). On average, participants gave all transition plan (e.g., persons responsible for actions) and other IEP components (e.g., IEP development team) a rating of lower than 3. The average perceived usefulness score across all IEP components was 58 (SD = 13.1).

Table 4.9

Descriptive Statistics of Participants' Perceptions of the Usefulness of IEP Components

IEP Component	N	M (SD)
General components (out of 25)		
Assessment data	117	3.5 (1.2)
The student's strengths and needs	117	4 (.9)
Subjects, courses, or alternative programs to which the IEP applies	115	3 (1.2)
Accommodations	116	4.3 (.9)
Provincial assessments	113	2.4 (1.5)
Special education program (out of 25)		

Baseline level of achievement	91	3.3 (1)
Annual program goal(s)	103	3.1 (1.1)
Learning expectations	102	3.4 (1.1)
Teaching strategies	106	3.9 (1)
Assessment methods	105	3.7 (1)
Transition plan components (out of 20)		
Goal(s)	101	2.9 (1.2)
Actions required	100	3 (1.3)
Persons responsible for actions	102	2.8 (1.3)
Timelines	101	2.7 (1.3)
Other components (out of 20)		
Human resources	86	2.3 (1.2)
IEP development team	109	2.9 (1.3)
Sources consulted in the development of the IEP	102	2.5 (1.1)
Log of parent/student consultation and staff/review updating	105	2.7 (1.3)
Perceived usefulness score (out of 90)	111	58 (13.1)

Note. Scale values ranged from 1-5. 1 = not at all useful; 2 = a little useful; 3 = somewhat useful; 4 = very useful; 5 = extremely useful; N/A = not/applicable.

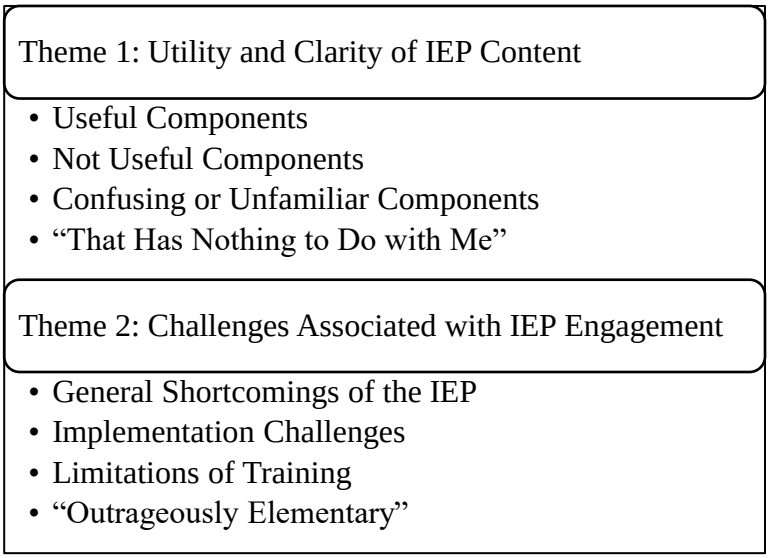
Phase 2: Think Aloud Task and Interview

Two main themes related to the first research question, or teachers' perceptions of the IEP for secondary students with autism. These themes are entitled (1) utility and clarity of IEP content and (2) challenges associated with IEP engagement. Within each theme, participants'

thought units were further classified into sub-themes, which are summarized in Figure 4.1. A detailed description of each theme and sub-theme is provided below.

Figure 4.1

Overview of Themes Related to Teachers' Perceptions of the IEP



Utility and Clarity of IEP Content. This theme encompasses participants' reflections about the various components of the IEP. This includes what they perceive to be useful, not useful, confusing or unfamiliar, or irrelevant to their role. Participants' thought units were further classified into the following sub-themes: (a) useful components, (b) not useful components, (c) confusing or unfamiliar components, and (d) "that has nothing to do with me."

Useful Components. Throughout phase 2, participants noted the components of the IEP they perceived to be particularly useful. Often, participants commented on the strengths and needs section of the mock IEP or of IEPs in general. There were some differences in why participants considered this component to be useful, though. For example, one participant noted the importance of knowing students' strengths in order to build relationships with them:

> Okay, so strengths. I always like to look at strengths to kind of know some things that I can start off with the student and definitely some things to give them some praise on as we start to build a relationship.

Another remarked that they used the strengths to support the student more broadly, "Yeah 100% because that's where I base my IEP on, right? Like, I need to know what they're good at and what they're not good at, so that I can better help them get ahead in life, right?" Most of participants' reflections about strengths and needs pertained to strengths rather than needs, with one of the more experienced participants praising this framing within the IEP: "I like now that they have strengths and needs. I think it was articulated differently before. Need was more of what was front and center. Now it's strengths, and so how do we capitalize on those strengths?"

Participants spoke similarly about the accommodations section of the IEP, which is presented alongside modified and alternative program expectations. Comparing IEP components, one participant explained:

> I would have to say that looking at between their strengths and their needs is in a tight race for the instructional, environmental, and assessment accommodations. Those two are definitely building blocks on which I make a lot of my decisions.

Similarly, another remarked that "the second thing of importance to me is I think the accommodation part because that's my action items. That's what I have to do every day, so I need to make sure that I'm doing those things." Even though the mock IEP was accommodated only (see Appendix D), several participants made a point of commenting on modifications in either the think aloud task or interview. For example, one participant noted that "Modifications is a big one I'll look at, just to check if they have been modified in any subjects, and if so, which ones." For the most part, though, participants spoke of the overall value of the accommodations section,

sometimes praising its structure: "The accommodations, this is the most helpful part for teachers, to be honest. This gives us the most data in terms of the needs on all three levels, instructional, environmental, and assessment."

While participants recognized the importance of the relevant assessment data section, one added important context: "There's probably other information in that psychoeducational report that would be useful, but as a classroom teacher I definitely don't have the time to get into that report." For the most part, though, comments about this section of the IEP were positive, such as "speech and language I like to look at, too, just to know if there is any difficulties with communication and in which ways." One participant reflected:

> And I love reading through all of the data, the assessment data that kind of came to this designation. So I look at like the psychoeducational, behavioural, speech. And I do read through all of the results so I can get a fuller picture of sort of the historical trajectory in diagnosing the student.

While most of the thought units were contained to a single component of the IEP, one participant remarked on the importance of considering how the parts work together:

> And then some certain students, the first little bit I will refer back to their assessments and some of their strengths and needs as well. But I definitely carry the accommodations around with me in my assessment folder so it's a constant reminder. Are you meeting these? What are we working on? Are these needs being met?

Not Useful Components. While there was considerable variation in what participants considered to be less useful, the transition plan came up consistently. Several participants reasoned that this was because they lacked individualization or were written in vague terms. One

commented, "The transition plan, definitely, I honestly don't even read it. Because I've read it once, I've read all of them." Another similarly observed:

> So this is actually a section I don't really look at very much because I think it could be useful, but with the way that they're done at my school they're not, it's not actually useful, because it says the exact same thing.

Another noted that there was "almost nothing" in them: "It's like, arrange a transition plan meeting with student, family, and agency partners. That's the only thing that it says for a lot of them." During the think aloud task, participants often observed that they spent more time reviewing the transition plan section of the mock IEP because of the level of detail it contained (see Appendix D). During the interview, several participants indicated that they would typically spend minimal time on or skip this section.

Another IEP component that participants considered to be less useful was the provincial assessment section. One participant noted:

> Provincial assessments. I find these assessments, to be perfectly honest, of less interest to me as a teacher, because that's just, pedagogically, I don't find those provincial assessments to be true indicators of very much as we know as teachers.

Another noted difficulty interpreting provincial assessment information in the context of their school: "And because I know for all the students at our school, provincial assessment data is like, they're not scoring well. So I don't have a real comparison. So that doesn't mean that much to me." It should be noted, however, that some participants checked whether the student was writing provincial assessments as an indicator of their academic abilities. If students were exempt, participants used that information to make inferences about their literacy or numeracy level: "So no literacy test yet. Sometimes that's a good indicator."

Lastly, several participants considered the logs of parent/student consultation to be less useful to them. Reflecting on the time spent on this section during the think aloud task, one participant reasoned, "So I felt like it was like incomplete. So maybe that's why I didn't spend a lot of time on it and it didn't really give me any useful information." After stating that they never looked at the log of parent/student consultation, one participant explained that this was perhaps due to minimal involvement of parents at their school: "I also work with a lot of students who, I don't think their parents are very involved in this process, too. So maybe that should be something I check out a little bit more."

Confusing or Unfamiliar Components. Given that participants had a wide range of teaching experience, with some within their first five years and others in the profession for decades, there was variation in terms of whether participants deemed any IEP components to be confusing or unfamiliar. Naturally, there was also some overlap with IEP components that others considered to be useful or not useful, such as the relevant assessment data section. For example, one participant commented that they found the clinical summaries to be inconsistent, using "super pscyho babble that isn't really accessible to teachers." Looking at the relevant assessment data of the mock IEP, another participant noted "I don't know what any of these assessments are. I don't know what this means. Why is that up at the front, and I'm spending time reading it when the accommodations and strengths and weaknesses are underneath?"

Similarly, despite the fact that accommodations were prominently discussed as useful in both the think aloud and interview data, much of what participants deemed confusing were the actual accommodations themselves. Reviewing the accommodations listed on the mock IEP, one participant observed, "'Minimizing background noise,' sure. 'Quiet setting.' I don't know how

those two things are different, but okay." Moreover, multiple participants commented on the reduction in the number of tasks to assess a concept or skill accommodation. For example:

> And then the reduction in the number of tasks, I think is a little bit tricky and something I struggle with because I'm unclear about what that looks like, how to reduce it, but still assess them on everything that I need to assess them on. So that's something I struggle with a lot.

Participants also commented on aspects of the IEP process captured in the IEP document that they considered confusing. As an example, one participant stated: "Date of placement. This part's hard for teachers to understand. I mean, you're trying to combine this document, this document serves many different purposes, right? And as a classroom teacher, it's understandable that it's difficult to wade through." Another commented on how confused they were about students' role (or lack thereof) in the process, stating:

> I think that one of the things that I'm never quite sure on, because when I'm talking to students sometimes a student will say like, 'wait, what kind of meeting?'. . . It's mind boggling to me that in the high school level that they wouldn't be there.

"That Has Nothing to Do with Me." Lastly, several participants commented on the limited applicability of some IEP components to their role as a classroom teacher. Similar to IEP components participants considered confusing or unfamiliar, there was inevitably some overlap with the other sub-themes within the theme (e.g., what some participants considered useful or not useful, others deemed irrelevant). For example, considering the provincial assessment section, one participant who taught French noted, "This is a provincial assessment year. I think that would be fine, but that's not, that has nothing to do with me, really." Similarly, looking at the summary of the reading assessment presented in the relevant assessment data section, one

participant remarked, "Let's see. So reading assessment, I teach math, honestly, so I usually skip this one a little bit more, as it doesn't usually impact them crazy."

Once again, participants reflected on the transition plan, but this time in terms of its relevance to them rather instead of its overall utility. One explained:

> But I think the transition plan is something that I don't spend as much time on in terms of like I'm thinking about, that's in the hands of the head of special ed, and very rarely am I involved in any of the decisions that are made within that framework. I really keep my focus on what can I do in the classroom to support this student.

Another similarly commented, "and because as a classroom teacher, that transition thing, I'm like they arrive in my class, and then they leave my class." Explaining why the transition plan felt irrelevant to their role, one English teacher explained that only seeing the student for 75 minutes per day for half a semester did not enable them to provide any meaningful support related to transitions. It should be noted, however, that when participants spoke about an IEP component they deemed to be irrelevant to them, they generally did state to whom they thought it was relevant. For example, with the logs of parent/student consultation, one participant explained that it would be more useful to the SERT: "and a lot of the consultation. I don't usually often read through like who's contacting who. It's really helpful for SERTs but for a general teacher it's one that you don't spend a lot of time on." Another noted that they steered clear of the consultation section but trusted the relevant personnel to do their job with it.

Challenges Associated with IEP Engagement. This theme explores some of the general shortcomings of the IEP along with some of the reasons teachers' engagement with the IEP may be more limited. This includes inadequate access to relevant training and key differences between the elementary and secondary panels that teachers must navigate. Within this theme,

thought units were classified into the following sub-themes: (a) general shortcomings of the IEP, (b) implementation challenges, (c) limitations of training, and (d) "outrageously elementary."

General Shortcomings of the IEP. Throughout phase 2, participants tended to reflect on some of the larger issues with the IEP. Explaining why they wanted to participate in the research, one participant noted, "I think the IEP document itself and the process that we use to access it, and the way that we consult it and work with it should be improved." Similarly, after reviewing the mock IEP during the think aloud task, another summarized: "but looking at a document kind of like this, it doesn't really give tons of information on how to actually engage the student or enhance their learning, right?" While some participants kept their critiques short and sweet (e.g., "It's very long, I'll be honest. I think it's a little too long"), others offered deeper reflections on the reasons they considered it challenging to engage with the IEP:

> It's a document for different purposes. Like it's for the parents, it's also for me as a teacher especially in like a high needs classroom environment. It's also for the other professionals who may or may not interact with that student to understand. So it can't be all in teacher language, and it can't be, it definitely can't all be in professional language.

Reflecting on its overall value, one participant pondered:

> So I feel like the IEP, does it enhance student learning? I would hope. But it is kind of like a necessary evil in a way that it doesn't necessarily do what we want it to do, but it seems to do a better job than nothing, maybe.

Implementation Challenges. Participants cited a variety of implementation challenges associated with the IEP, which they considered to limit their engagement with it as a whole. First, participants commented on the time needed to implement an IEP as intended. For example, one participant reflected:

> I don't even think that it's that people don't want to, or they don't want to provide the accommodations, it's that they we are incredibly busy and we have so much. And when you have so many students that have the IEP, I think some people start to kind of like hierarchy which student needs the most supports.

While reviewing the mock IEP during the think aloud task, another similarly noted that the collaboration needed to effectively implement an IEP takes time, too: "and then the team, good. Nice big team. In reality super difficult to pull that together, because there's no time." One participant made clear that teachers not only needed time to read and review IEPs, but also, to build them into their program planning:

> And it's hard now because of the number of IEPs in a room. And you have those with physical disabilities as well. Like I was wearing FM, I've got students with ASD, I have students who have anxiety and depression. And so you're planning your program around how do I do this so that everybody's benefiting?

Another implementation challenge participants noted related to the alignment between the environmental accommodations listed on the IEP and the realities of their classroom context. Multiple participants commented on strategic seating specifically, with one stating:

> If there's only a few that require strategic seating, I can accommodate that, but then it's like if there's a third of the class that requires it, and maybe less so and you kind of have to go based off of your observations.

Another similarly verbalized their frustrations about minimizing background noise:

> Minimizing background noise, same thing. We're in a class of students, there's 28 in my class. There's no quiet setting unless it's like, quiet setting would be like if I set them up

> somewhere else, but then a teacher in Student Success probably wouldn't be able to help them out.

Participants also considered a lack of up-to-date information on the IEP to be a significant challenge to implementation. One participant observed, "So people don't treat it as a working document, right? So I feel like they don't, you know, if they do an assessment on them they don't put it in." Considering their own teaching context, another participant questioned the relevance of the assessment data for the students in their class with IEPs:

> So like some of my kids last year hadn't had like a reading assessment since Grade 3. I'm pretty sure their teacher probably did, or maybe they didn't. Maybe they just gave up on them. I don't know but I'm hoping that they just forgot to put it in.

Limitations of Training. Participants considered a lack of ongoing training to be one of the challenges associated with IEP engagement. To use one participant's words, "there's very little in the way of follow through in terms of reading IEPs and implementing them." Not only did several participants comment on the typical barriers to accessing training (e.g., arduous approval processes, the need to arrange classroom cover, etc.), they commented on a lack of *relevant* training. When asked about the focus of IEP-related training at their school, one participant explained:

> It's very much about organizing . . . like, how to create a file. Like, there's been tech teaching about IEPs, you know, how to pull out of an entire huge list of all 1,200 students in our building the 14 for your class. Well, great. Now they're in a folder. Awesome. But we're no further ahead in terms of the needs of those students.

Similarly, when asked if they had done any relevant in-service training during the interview, one participant responded:

> Not enough. No, if there was, it was again, it was very generalized. We did a lot around assessment. We do a lot of very traditional topics. We've done a lot of mental health in the last few years, EDID, but we have done very little on neurodivergent [learners] and even just exceptionalities, period.

One participant expressed their frustration that, even when they attended relevant training, their questions went unanswered:

> And even within the board, like I was at a PD session for my NTIP program, where we had a special education director come in and people were asking those questions like, what about when two students' IEPs directly contradict each other but we're not allowed to have either of them out of the room? What do we do? But there's never any firm answer on that.

Participants were clear that the lack of targeted, relevant training limited their engagement with the IEP and, ultimately, their ability to best support their students.

"Outrageously Elementary." Participants consistently considered the differences between the elementary and secondary panels to be a significant challenge associated with IEP engagement. For some, this related to the fact that students' IEPs are primarily written when they are elementary-aged, rendering the content outdated. One participant explained:

> I go to the assessment first to make some really quick decisions about how recently this student has been looked at, what were the issues, how outdated must they be, because sometimes they're outrageously elementary school and that's very obvious.

For the most part, however, participants raised concerns about the use of particular teaching strategies or accommodations listed in the IEP at the secondary level. When viewing the mock IEP during the think aloud task, one participant reflected that:

> The only problem with the frequent breaks is that they're gonna miss out on a big chunk of time in class. That's the only problem with high school as opposed to elementary. It's easier to do those frequent breaks but depending on how frequent the breaks become.

Additionally, several participants commented on the use of a pictorial schedule to ease transitions and task schedules as accommodations at the secondary level. Thinking about their own classroom, one participant commented:

> To be honest, I probably wouldn't use that in my class . . . because it's high school, and that would not go over well. It's different if they're in a self-contained classroom. In my classroom, I feel like that would center them out, and I don't think I want to do that.

Similarly, reflecting on the resources available at the secondary level, several participants commented on the feasibility of using alternative workspaces as an accommodation, with one noting, "That one is often a challenge in high school in terms of staffing that and supervision."

Related, others reflected on how the structure of secondary schools is not necessarily aligned with some parts of the IEP process. For instance, one participant explained that in Grade 9, when teachers are asked to provide input on an IEP within the first 30 days of school, typically they do not know the student well enough to do so. Another similarly commented on the number of students that teachers are responsible for compared to elementary teachers, stating:

> The reality in a high school environment when a teacher's got 75 to 90 students is that that little comment, 'some delays in personal care and fine motor skills' might get lost in actually going to the OSR to look up what that means.

Through both the think aloud task and interview, participants made clear that their engagement with the IEP was coloured by their views as secondary teachers working with documents typically developed at the elementary level.

Research Question 2: Teachers' Perceptions of Their Preparation to Implement the IEP

Phase 1: Survey

Participants were asked to rate their perceived preparation to carry out various actions and responsibilities associated with the IEP on a scale between 1-5 (1 = not at all confident; 5 = extremely confident). Items were clustered into two groups to increases accessibility of the instrument: (a) inclusive education items and (b) collaboration items. As shown in Table 4.10 below, on average, participants reported that they felt most confident or prepared to provide accommodations (M = 4.2; SD = .9) for secondary students with autism. Sharing resources with other IEP team members (M = 3.9; SD = 1), differentiating assessment for alternate communication modes (M = 3.8; SD = 1.1), and collaborating with learners and their families (M = 3.8; SD = 1.1) were similarly highly rated. Using data collection procedures to monitor individual student progress had the lowest rating (M = 3.3; SD = 1.1). The average perceived preparation score across IEP-related actions and responsibilities was 54.1 (SD = 12.7).

Table 4.10

Descriptive Statistics of Participants' Perceived Preparation to Carry Out IEP-Related Actions and Responsibilities

IEP-Related Action	N	M (SD)
Inclusive education items (out of 40)		
Individualizing instruction	114	3.7 (1)
Pacing instruction	115	3.4 (1)
Providing accommodations	115	4.2 (.9)
Adapting general education content	114	3.6 (1)
Differentiating assessment for alternate communication modes	115	3.8 (1.1)

Planning for the implementation of IEP goals and objectives	115	3.4 (1.1)
Using data collection procedures to monitor individual student progress	115	3.3 (1.1)
Individualizing evaluation criteria	115	3.4 (1.2)
Collaboration items (out of 35)		
Participating as a member of an IEP team	115	3.5 (1.5)
Sharing responsibility for decision-making	115	3.5 (1.3)
Working with other professionals to plan to implement IEP goals and objectives	115	3.6 (1.2)
Sharing resources with team members	115	3.9 (1)
Disseminating and gathering information related to student needs and abilities	115	3.7 (1.1)
Collaborating with colleagues to use data to evaluate progress and inform future instruction	115	3.7 (1.1)
Collaborating with learners and their families to establish ongoing communication	115	3.8 (1.1)
Perceived preparation score (out of 75)	113	54.1 (12.7)

Note. Scale values ranged from 1-5. 1 = not at all confident; 2 = a little confident; 3 = somewhat confident; 4 = very confident; 5 = extremely confident; N/A = not/applicable.

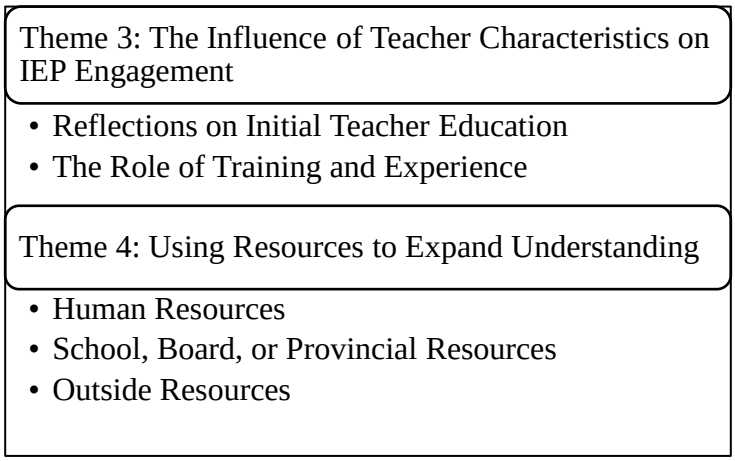
Phase 2: Think Aloud Task and Interview

Two main themes related to the second research question, or teachers' perceptions of their preparation to implement an IEP for secondary students with autism. These themes build on those pertaining to teachers' perceptions of the IEP and are entitled (3) the influence of teacher

characteristics on IEP engagement and (4) using resources to expand understanding. Within both themes, thought units were further classified into sub-themes (see Figure 4.2). Detailed descriptions of each theme and sub-theme are provided below.

Figure 4.2

Overview of Themes Related to Teachers' Perceptions of their Preparation to Implement the IEP



The Influence of Teacher Characteristics on IEP Engagement. This theme explored how teachers' backgrounds, training, and experiences influenced their approach to and engagement with the IEP for secondary students with autism. This included participants' current or previous teaching assignments, reflections on their initial teacher education, and any other personal or professional experiences that have helped them prepare to implement an IEP in practice or support students with autism. Sub-themes include: (a) reflections on initial teacher education and (b) the role of training and experience.

Reflections on Initial Teacher Education. Primarily during the interviews, participants reflected on how well they felt their initial teacher education program prepared them to implement an IEP and to support students with autism specifically. Overall, participants' views were mixed, with some more negative than others. For example, one participant rated how well

their teacher education program prepared them by saying "On a scale of 0 to 1, I would say 0.1." Another participant noted the limitations of their Bachelor of Education courses, but emphasized how helpful their practicum experience and associate teacher were to their learning:

> Other than during practicum, I don't recall ever actually seeing what an IEP looked like . . . I think we talked about or looked at what actual accommodations would look like, but I don't recall ever seeing the full legal document that an IEP is in teacher education. I only remember that from having a really good associate teacher who showed me that. So I think making clear what that looks like would be really useful,

Another participant echoed the same sentiment, stating: "Teachers' college didn't prepare me to be a teacher. It was being in the classroom that prepared me to be a teacher."

However, some participants shared positive views of their initial teacher education program, too. For example, one participant with a physical education teachable noted how well their program prepared them to engage students and meet diverse needs, which they felt translated well to working with students with autism. Other participants who had positive experiences noted the role of specific professors in their learning. For example, one explained:

> There were two very caring, empathetic, charismatic as well teachers, instructors, profs, and I think they did a really great job about teaching about the IEP at the same time as about the individual students and as people. And I think that that foundation is what I've sort of picked up and carried forward.

Participants also offered suggestions by way of what they feel would be useful to see in initial teacher education. Specifically, participants suggested Bachelor of Education programs spend more time reviewing teachers' legal responsibilities related to the IEP as well as procedural requirements, such as participating in an IPRC meeting. While acknowledging that some

procedures were board-specific, overall, participants saw the value in introducing teacher candidates to such procedures, even if only in broad terms.

The Role of Training and Experience. During both the think aloud task and interviews, participants continually reflected on the role of any additional training they had undertaken and the teaching experience they had acquired, acknowledging that they viewed the IEP through their own unique lens. As an example, reflecting on their IEP-related knowledge, one participant remarked "I just learned that through being in the fire of being in a specialized program class." Sometimes, participants' commentary about their training and experience was provided as context for how they viewed an IEP or a component of it. For example, one participant explained during the think aloud task:

> Before I had the spec. ed. knowledge, I'd usually just jump right to accommodations, and I've noticed just now that I've been working in there I kind of want to look through all of it because it does give me some indication about how well things are working, how long they've been accessing it. I find that gives me a little more information than I used to give it credit for.

These reflections could sometimes be characterized in terms of self-efficacy, with several participants noting the role of their training and experience—or lack thereof—in shaping their beliefs about their ability to engage with the IEP. More experienced participants tended to say things like "So the benefit with right now being a teacher and a SERT is I'm very comfortable with this format, so I found it a little bit easier to find the information in this case" and "After I did my special class, I'm pretty much an expert on the IEP." Conversely, less experienced participants' said things along the lines of "I think because of my lack of confidence, I do take a more passive role than probably I should. And maybe that will come with time and confidence.

But that's where I'm kinda at." In both cases, however, participants acknowledged that the learning was lifelong. One of the more experienced participants reflected on the language used in the IEP: "So even unpacking the language, understanding the language. Like I said, there was some language that I didn't even understand at year 17." Regardless of the amount of training and experience participants had, they generally recognized its role in shaping how they viewed the IEP, their beliefs about their ability to engage with the it, and the importance of ongoing professional learning.

Using Resources to Expand Understanding. This theme and related sub-themes explored participants' engagement with various resources relative to the IEP or supporting students with autism. This included their engagement with human or relational resources (e.g., special education colleagues); school, school board, or province-level resources (e.g., policy documents); and outside resources (e.g., online or print sources). Sub-themes include: (a) human resources, (b) school, board, or provincial resources, and (c) outside resources.

Human Resources. Of the three resource types, participants most prominently discussed human resources as a means of expanding their knowledge around IEPs and supporting students with autism. This was almost always someone with a specific special education role, such as a SERT, learning support teacher, itinerant teacher or consultant, or department head. Some participants further specified who they would go to for what, with one noting that they would start with the department head about things like teaching strategies but ask a SERT about technical or legal aspects of the document. In other cases, participants stated that they might approach school staff with knowledge of the student. For instance, one participant commented:

> Sometimes other teachers who you know that they've got a really good relationship with that student, because sometimes it's like with any student, it sometimes works and

> sometimes doesn't . . . So finding that teacher that had that thing with them that really worked, but most often the consistent people doing that are the EAs. They're a brilliant resource.

Several participants mentioned that they would connect with the guidance department, either because they might have a relationship with the student or some special education knowledge. For example, one participant explained, "Our guidance department head was in special education. So if there's ever a diagnosis or something I don't know, I will often actually just come and ask her and kind of use her as a resource." Another explained that, "Possibly if they're coming from Grade 8, maybe we're touching base with the Grade 8 teacher. I would be able to get that information from guidance. So then there's a guidance conversation." Human resources, including those with specific special education roles, existing relationships with students, and guidance counsellors were thus the most prominent resources participants used to expand their knowledge relative to the IEP and supporting students with autism.

School, Board, or Provincial Resources. While participants reflected on their use of school, board, and provincial resources less frequently than human resources, they were still represented in the data. In terms of school-level resources, one participant reflected on a book study put on by their school:

> And the PD Committee decided to buy a series of fiction books that presented the stories of marginalized youth and, yeah, so we had a book that presented the life of a student that is gifted and has autism in like a fictional context. That was really good.

Participants' reflections about their engagement with board or province-level resources were mixed, with most participants noting that they engaged in Ministry-mandated professional development, but did not always consider it relevant to the IEP or autism. Similarly, participants

acknowledged the existence of board or provincial policies but also stated that they did not necessarily utilize them. For example, "There's a bunch of board documents available with information, but I don't really like go off of that." One of the more seasoned teachers in the study recalled participating in a six-week certificate program offered by their school board, but noted it was focused on learning disabilities rather than autism, potentially limiting its relevance. Conversely, another participant recalled engaging in relevant professional development related to PPM 140 (i.e., Incorporating Methods of Applied Behaviour Analysis into Programs for Students with Autism Spectrum Disorders), but described a lack of follow through: "I'd be so interested to know if the people who implemented that from the get go like, what does the data say, are we doing a better job? Are we not?" Despite being featured less prominently in the data, participants still discussed their engagement with school, board, and provincial resources, though their relevance and effectiveness were sometimes questioned.

Outside Resources. Participants discussed outside resources, including online and print sources of information, external courses they had taken, or their engagement with community organizations. While outside resources were discussed with equal prominence to school, board, and provincial resources, evaluations tended to be more positive. In terms of online sources, participants tended to reference specific websites (e.g., Mathegon, Teach Special Ed, etc.). Although only mentioned by one participant each, other online sources included social media (i.e., TikTok), generative AI, and a Faculty of Education website that housed relevant resources. One participant also commented that they would review their own notes: "If I've taken a course I might go back to my course content and review some of the notes I made from the course and see if there's anything that could be useful." In terms of print sources, only one participant referenced turning to books:

> I mean, I'm a reader, anyway, I like to read. It's a hobby, and I've really appreciated some of the professional development that I've done that way. So I'd often go to the library and look for something specifically about that sort of profile just to, yeah, get more information.

Lastly, some participants mentioned specific community organizations and businesses that they might consult when expanding their IEP or autism-related practice, such as the Geneva Centre for Autism and Kerry's Place. While discussed with less prominence than human resources, participants' engagement with outside sources was varied and often discussed in positive terms.

Research Question 3: Relationships between Teacher Characteristics, Their Perceptions of the IEP, and Their Preparation to Implement It

Phase 1: Survey

Spearman's rank-order correlations were computed to assess the relationships between select demographic items, perceived usefulness of IEP components, and perceived preparation to implement IEP-related actions and responsibilities. Specifically, six variables were included in the analysis: (a) participants' current autism caseload, (b) participants' autism caseload over time, (c) years of teaching experience in general, (d) years of experience teaching students with autism, (e) perceived usefulness score, and (f) perceived preparedness score. Given the high inter-item correlation on both scales ($\alpha = .92$ for perceived usefulness and $\alpha = .94$ for perceived preparedness), total scores were used instead of computing correlations for each individual item.

While no variables were significantly correlated with perceived usefulness of IEP components, analysis revealed some weak to moderate relationships between the demographic items and perceived preparation. Specifically, there was a weak, positive correlation between participants' years of teaching experience in general and their perceived preparation to implement IEP-related actions, $\rho = .24$, $p < .05$. A similarly weak, positive correlation was found

between participants' autism caseloads over time and their perceived preparation to implement IEP-related actions, ρ = .32, p <.01. There was also a moderate, positive correlation between participants' years of experience teaching students with autism and their perceived preparation to implement IEP-related actions, ρ = .42, p <.01. The strongest correlation was between years of teaching experience and years of experience teaching students with autism, ρ = .77, p <.01. See Table 4.11.

Table 4.11

Spearman Rank-Order Correlations

Variables	1	2	3	4	5	6
1. Current autism caseload	-					
2. Autism caseload over time	.47**	-				
3. Years of teaching experience (all)	.2*	.37**	-			
4. Years of teaching experience (autism)	.2*	.46**	.77**	-		
5. Perceptions of IEP usefulness	.06	.05	-.21	.03	-	
6. Perceptions of IEP preparedness	.16	.32**	.24*	.42**	.2	-

Note. *p <.05, **p < .01.

Research Question 4: Teachers' Use of the IEP in Their Planning

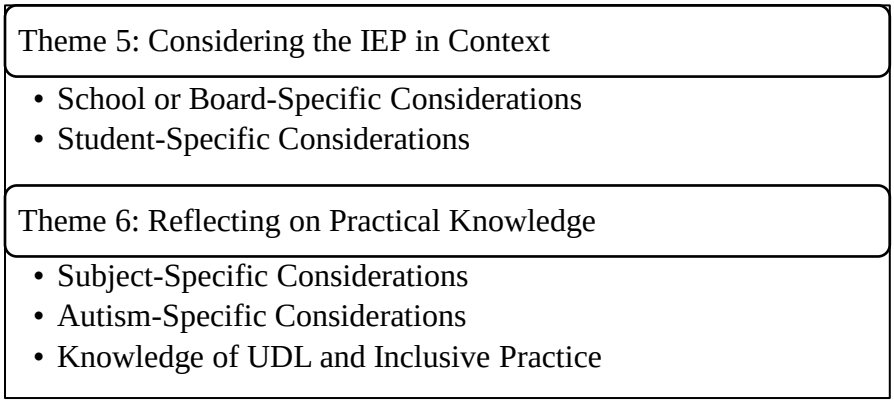
Phase 2: Think Aloud Task and Interview (Inductive Analysis)

The final two themes from the inductive analysis related to the fourth research question focused on teachers' use of IEPs in their planning to support secondary students with autism. Building on the previous four themes from the inductive analysis, these include: (5) considering the IEP in context and (6) reflecting on practical knowledge. Within each theme, participants'

thought units were further classified into the sub-themes in Figure 4.3. Themes and sub-themes are described below.

Figure 4.3

Overview of Themes Related to Teachers' Use of the IEP in Their Planning



Considering the IEP in Context. This theme relates to participants' contextual knowledge relative to the IEP, such as relevant practices within their school or board, classroom routines and resources, and individual student needs. Within this theme, thought units were classified into the following sub-themes: (a) school or board-specific considerations and (b) student-specific considerations. Each sub-theme is elaborated upon below.

School or Board-Specific Considerations. During the think aloud task, it was clear in participants' verbalizations that their school or school board context played a key role in how they engaged with the IEP in their instructional planning. For instance, one participant immediately questioned the classroom placement information presented on the mock IEP, noting that their school board had a specific autism program. This led the participant to wonder why the student was not in that program, and then consider the disadvantages associated with placement outside of the program (e.g., no timetabled general learning strategies course). Moreover, even though the mock IEP did not have any modified expectations, several participants remarked that

students in their school or board were not permitted to receive modifications at the secondary level in inclusive settings. For instance, one participant noted, "And then with my high school, we don't have any modified besides our specialized program. Any mainstream students are only receiving accommodations at my school." Participants also considered their school's resources relative to what was written in the IEP. For example, when reading over the individualized equipment section, one participant commented:

> My school is pretty good at having access to [Chromebooks] for all students, but it's really helpful if some of our students can get one from resource as well because it just allows us to have less that we need to keep in the classroom for the other students.

Overall, it was clear that participants took school or board programs, policies, and resources into account when engaging in instructional planning to support secondary students with autism.

Student-Specific Considerations. Throughout phase 2, participants continually came back to the idea that they needed to have a thorough understanding of the individual student in order to effectively plan using the information in the IEP. One participant summarized this sentiment:

> But you get to know the kid, and then you think, okay, what works for them and then you put that down as your teaching strategy. So I think just like working with the kid and just your experience of working with the student gives you your teaching strategies and what is going to help them learn.

Similarly, one participant explained during the interview, "When we were talking about Johnny Doe, we were talking about his interests, very specific interests. Now I can figure out how to loop those into any task or assignment to make sure that the student's engaged." Moreover, this consideration of individual student needs extended to how participants would plan to involve

students in the IEP process itself. As an example, one participant explained that, after reading the accommodations section, "I will go and I will talk to the student individually to see if this is even something that they want for the specific course that they're in." To summarize using one participant's words: "But really ask the student, what works for you? They know best."

Reflecting on Practical Knowledge. The final theme from the inductive analysis includes participants' reflections on their knowledge of their curricular subject(s), autism as an exceptionality, and UDL and inclusive practice. This theme also includes instances where participants identify gaps in their knowledge, such as wanting to know more about a certain aspect of the IEP. This theme was further divided into the following sub-themes: (a) subject-specific considerations, (b) autism-specific considerations, and (c) knowledge of UDL and inclusive practice.

Subject-Specific Considerations. Participants' reflections about their curricular subject(s) were a clear consideration in their planning relative to the IEP. Specifically, some participants commented on the challenges associated with implementing certain environmental accommodations in their language classrooms. One stated that "Alternative workspace as well with French, it's really hard because they can't learn the language, a lot of my class is oral, so that would be a hard one to do." Another similarly noted, "and sensory sensitivities will be tricky in [international languages] class, or just mine, at least, because it's very noisy, there's a lot going on." The English teachers who participated in the study noted some additional responsibilities they had related to the IEP, such as preparing students for the Ontario Secondary School Literacy Test (OSSLT) or supporting the development of social communication skills. As an example of the former during the think aloud task, one participant commented:

> This part here, I pay attention a little bit especially in terms of like the literacy test, if they're exempt from or not, because that kind of like impacts what we do in English, if we need to focus on that kind of thing.

As an example of the latter, another stated, "You know, and English, because it's communication, a lot of times there's communication challenges for these students. And so a lot of it is on you to kind of assist them." Similarly, a civics teacher reflected on the fact that the curriculum might present unique challenges for students with IEPs or social needs specifically. Reviewing the strengths and needs section of the mock IEP, they remarked:

> That also tells me a whole lot in terms of how I'm going to walk through some of the more challenging sides of teaching a course such as civics because we do have a lot of conversations and debates, and such as civics brings to the arena at a time such as this is, you know, politically, and all the things that pop up, I would right away know that, being aware of that concern and especially with social communication.

Participants' reflections on their curricular subject(s) relative to the IEP thus highlighted some further challenges associated with implementing IEPs at the secondary level.

Autism-Specific Considerations. In addition to student-specific considerations, participants were also quick to draw on their knowledge of autism when reviewing the mock IEP. During the think aloud task, several participants remarked that the information presented in the IEP was precisely what they would expect to see for a student with autism. An example of one such verbalization was "One hundred percent in line with an autism spectrum disorder diagnosis." Participants' knowledge of autism also prompted them to ask further questions about the IEP or point out what information might be missing. For example, one participant noted, "What's interesting is the exceptionality of autism and the diagnosis of autism. We're given no

reference to what, how severe, the severity of the ASD, it's usually given in a three-point scale to mild, moderate, or severe." Looking at the relevant assessment data, another remarked:

> So this child was diagnosed when they were six with autism, which is actually pretty late. So I would, as a teacher, be maybe thinking that they didn't receive many early supports, which we know is really important for students, if possible, to have as early of a diagnosis so they can receive supports as early as possible as well.

Lastly, participants drew on their autism knowledge to potentially build on the strategies in the IEP relative to their planning. After reading through the strengths and needs section of the mock IEP, one participant elaborated:

> Just to speak a little bit further about the organization and time management, a lot of the support I might give an ASD student around organization and time management is often well, sometimes it is just the bare bones organization, helping organize a binder.

Participants' autism-specific knowledge helped them to make sense of the IEP in front of them and potentially expand on the information within it.

Knowledge of UDL and Inclusive Practice. The last sub-theme associated with practical knowledge pertained to participants' knowledge of UDL and inclusive practice. Specifically, participants persistently wrestled with the idea that much of what was written with the IEP was—or at least should be—embedded in their planning anyway. One participant framed it as, "So if I was being, you know, a decent teacher, I would be employing UDL strategies in the first place, that would ideally cover most of this." Participants primarily made these remarks when reviewing the accommodations section of the mock IEP during the think aloud task. Looking at the assessment accommodations, one participant noted, "He might need more time, but I would never deny it to any student." Similarly, reviewing all of the accommodations listed, another

commented "Yeah, so I would say that when I'm looking at each of them, I will make note of specific students that require specific accommodations that I'm not already providing to every single student." Several others noted that they already incorporated some of the accommodations listed in the mock IEP (e.g., mind maps, graphic organizers, and frequent breaks) in their planning. Others noted board-specific policies that required them to provide certain accommodations (e.g., extended time limits) to everyone. One participant pointed out an issue with this relative to their engagement with the IEP while planning:

> I'm sure I'm probably not alone in just kind of glazing over all these things now that it's assumed that we're doing everything for everybody. So I think, yeah, what's the difference now? Or what does the board want us to understand or see as the difference between "you have to do this for everybody, but this kid, you *really* have to do it for."

Participants' reflections related to UDL and inclusive practice highlighted the tension between providing accommodations via the IEP as a legal requirement and what would otherwise be viewed as "decent" practice.

Phase 2: Think Aloud Task and Interview (Deductive Analysis)

Using the deductive coding scheme (see Appendix H), participants' verbalizations were characterized as cognitive processes during the think aloud task. As summarized in Table 4.8 earlier in this chapter, deductive codes were re-organized into four main themes: (a) engagement behaviours, (b) metacognitive awareness, (c) evaluating, and (d) connecting to practice. Given the descriptive nature of deductive analysis, the number of thought units from the think aloud transcripts were tallied and the coded excerpts associated with each code and theme was quantified. Table 4.12 summarizes the extent to which each theme and associated cognitive process was represented in the data. Overall, thought units were most commonly coded as

engagement behaviours (*n* = 295; 36.2%), followed in frequency by connecting to practice (*n* = 243; 29.9%), metacognitive awareness (*n* = 143; 27.6%) and, finally, evaluating (*n* = 136; 16.7%). In the paragraphs that follow, a detailed description of each theme from the deductive analysis and associated cognitive process is provided.

Table 4.12

Frequencies and Percentages of Themes and Associated Cognitive Processes

Theme	Associated Cognitive Processes	N (%)
Engagement behaviours		295 (36.2)
	Reading	62 (7.6)
	Describing IEP features or format	3 (.4)
	Describing IEP content	67 (8.2)
	Understanding	90 (11.1)
	Analyzing	53 (6.5)
Metacognitive awareness		143 (27.6)
	Diversion	19 (2.3)
	Describing procedural behaviours	67 (8.2)
	Reflecting	27 (3.3)
	Reasoning	30 (3.7)
Evaluating		136 (16.7)
	IEP features or format	6 (.7)
	IEP content	130 (16)
Connecting to practice		243 (29.9)
	Connecting	209 (25.7)

	Active planning	34 (4.2)

Engagement Behaviours. The first and most prominent theme from the deductive analysis, representing 295 coded excerpts (36.2% of the data overall), refers to a set of lower and higher order cognitive processes that participants engaged while they viewed the mock IEP. As shown in Table 4.12 above, these processes included: (a) reading, (b) describing IEP format or features, (c) describing IEP content, (d) understanding, and (e) analyzing. Each cognitive process is detailed below, noting how they are related yet distinct.

Reading. Simply put, reading captured any time participants read words, phrases, or sentences aloud off the screen, which represented ~21% (n = 62) of engagement behaviours overall. The amount of text participants read aloud during the think aloud task ranged from one to three sentences. Participants either read a sentence in its entirety (e.g., "Speech and language assessment, John has age appropriate receptive and expressive language skills, but demonstrates challenges with pragmatic language") or skimmed or skipped over certain words (e.g., "Actions required at this time. Yes. John will work toward earning…to pursue opportunities in the trades"). Reading aloud was also largely concentrated to certain sections of the IEP. This was most apparent when participants were reviewing the summaries of the assessment data. Coded excerpts included, "So anyway, this thing says, John has age appropriate receptive and expressive language skills but demonstrates challenges with pragmatic language" and "Johnny's fluency is impacted by difficulties with prosody when reading aloud, okay." Participants similarly read aloud when reviewing the accommodations (e.g., "Reduction in the number of tasks used to access the concept or skill") and strengths and needs sections (e.g., "Gross motor skills, visual learning, independence with structured tasks").

Describing IEP Format or Features and Describing IEP Content. Related, participants also described the IEP features and format, as well as IEP content throughout the think aloud task. While describing IEP features or format was the least prominent engagement behaviour (~1%) and represented the fewest coded excerpts, describing IEP content represented ~22% of engagement behaviours overall. In terms of describing IEP format or features, one participant commented on the length of the IEP, (e.g., "So first of all, this looks like one document that's nine pages") while two others commented on how it appeared different to that of their school board (e.g., "Definitely I'm feeling like the IEP that I'm looking at is somewhat different in format and layout from the ones that I have been looking at for the last number of years"). In terms of participants' descriptions of IEP content, these were distinct to reading in that they encompassed both what participants noticed and what they did *not* notice within the document. For the former, participants used their own words to describe what they noticed. As an example, one participant re-framed what they saw in the individualized equipment section as Special Education Allocation (SEA), even though this term was not included in the IEP: "They do have a SEA, we call it SEA, like equipment. So a Chromebook and noise canceling headphones." For the latter, participants pointed out what they did not observe in the IEP, with one participant noting, "It doesn't have anything about assistive technology." Another commented on the absence of certain types of courses, "and they aren't in an arts course this semester."

Understanding. Next, participants demonstrated understanding while viewing the IEP, which was the most prominent engagement behaviour representing ~30% of coded excerpts within the theme (n = 90). Understanding could be further broken down based on its definition (see Appendix H) into sub-processes such as explaining and inferring. As participants viewed the

IEP, it was common for them to explain their thoughts about a particular section. For example, one participant justified their view of assessment data, stating that:

> If it's something recent, then we're still probably working through some information versus an older one. Then the kid is usually a little more established and has some things they've already tried and a couple things that already worked for them.

Similarly, another noted: "I'm happy when I see a psychoeducational assessment because I know a psychologist has diagnosed it and that kid is going to get a lot more accommodations than just a doctor's note." Participants also demonstrated understanding through making inferences about the IEP based on the information provided. As an example, multiple participants inferred the student's level of functioning based on the classroom placement and assessment data. One participant noted:

> So looking at the initial assessment data, this would just be a regular student in my classroom, right? Like he doesn't seem that he presents with any challenges if he doesn't have a behaviour plan or anything like that, he might just need a little bit more support for transitions between activities, so lots of visual cues and things like that is what my first look at.

Another participant similarly observed, "And that they're in a regular class with indirect support. So just based on that, I'd assume that they are able to kind of fit in or join in with a regular class pretty smoothly with some accommodations."

Analyzing. Lastly, participants analyzed how the different parts of the IEP related to one another and to the overall purpose of the document. Analyzing represented ~18% of all engagement behaviours (n = 53). It was common for participants to engage in analyzing early in

the think aloud task as they tried to determine the student's current age and age of diagnosis based on the information provided. For example:

> Okay. And that was in 2016, which is eight years ago. Okay, so that was eight years ago, the student is in Grade 9, so that means they were in Grade 1 when they received this assessment or they did this assessment.

Participants also used the information presented in different sections to make sense of the IEP as a whole. After reviewing the strengths and needs, one participant noted, "Not too surprising based on the report that I just read above that they are strong in gross [motor skills] compared to fine [motor skills], as I just mentioned, of what I would do for that." Similarly, another participant commented on how the areas of need related to the courses to which the IEP applied:

> And then if I go back to understanding of pragmatic language and social communication as being areas of need, I'm wondering about that French and the English, like both of those language courses being in one semester. Just curious what that would look like for that student.

One participant even noted a discrepancy between what was presented in the areas of strength and accommodations sections: "Accommodation, more frequent breaks during assessment is interesting. I don't know what that means for some kid who up top says that they have really good focus on a task. Why would we want to break up their focus?"

Metacognitive Awareness. Metacognitive awareness represented 143 coded excerpts (27.6% overall). For the purpose of this study, the metacognitive awareness theme included both lower and higher order cognitive processes and encompassed any statements that demonstrated participants were reflecting on their own thinking, including the use of cognitive strategies they were using to monitor their thinking about the IEP. As can be seen in Table 4.12 above, cognitive

processes associated with the metacognitive awareness theme included: (a) diversion, (b) describing procedural behaviours, (c) reflecting, and (d) reasoning.

Diversion. Though diversion was not common among participants, representing 19 coded extracts (~13% of metacognitive awareness overall), it mostly occurred when participants came across information they did not fully understand. For example, when looking at the information presented at the beginning of the IEP, one participant stated: "So date, annual review waived by parent or guardian, N/A? I don't know why that's been waived by the…Oh, maybe because it hasn't been a year since the IPRC date? I don't know exactly what that means." After reviewing the assessment data section, another commented: "And then yes, not really sure what I'd do with the occupational therapy assessment there." Other instances of diversion occurred when participants lost their spot in the IEP (e.g., "Okay, where was I? Relevant medical conditions?") or were looking for specific information that they could not find (e.g., "Where is that?").

Describing Procedural Behaviours. Describing procedural behaviours was the most prominent cognitive process associated with metacognitive awareness (n = 67), representing almost half of all excerpts coded to the theme. Participants could be seen as describing procedural behaviours when they noted what they did, were doing, or would do relative to the IEP document. This included statements about navigational decisions (e.g., where the participant was looking or where they planned to look next), and any actions such as skimming, scrolling, highlighting, and note-taking. While no participants took notes while completing the think aloud task, several commented that they typically did takes notes when viewing an IEP. For instance, one stated, "I'm sort of note taking often as I go on a separate document, something that's private and protected on the school's drive so that it's not, you know, accessible to anyone else, or the students, or even coworkers." Another commented, "And because it's a working copy, I jot notes

and, you know, depending on where they want to be for quizzes or tests. And it's a living document from that end."

Reflecting and Reasoning. Reflecting (n = 27) and reasoning (n = 30) can be viewed as closely connected but distinct aspects of metacognitive awareness, representing ~18% and 21% of excerpts coded to the theme, respectively. For reflecting, comments tended to focus on participants' own attention and awareness. For example, when talking about how IEPs are formatted in their school board, one participant noted, "And sometimes because of that I also find I can't remember where I saw a little snippet of information. I have to click around and click around." Another commented "I never pay attention to the log of student/parent consultation. That is not something I've ever looked at to be honest." Reflecting on the nature of the think aloud task, one participant noted:

> I feel like, maybe it's because I'm not paying attention like I am in this kind of read aloud setting, but I don't think I've ever gotten this much information from looking at this section of the assessment data. It usually just says some vague assessment that I don't know what it means, and it says completed this date and that's all that I remember seeing or paying attention to.

As for reasoning, participants tended to justify either their procedural behaviours (e.g., actions and navigational decisions) or reflections. Explaining the rationale behind the decision to look at date of birth and current grade together, one participant reasoned:

> So for sure, looking at date of birth, but combined with the current grade because those two things don't always connect. Sometimes students might be in Grade 10, but they're actually a little bit older. So that's something that I would explore for sure.

Participants similarly reasoned around the reflections they verbalized. Discussing the transition plan, one newer teacher noted: "But most of the time I just skip over this because it doesn't really mean much to me, or I don't understand how to interpret it."

Evaluating. Evaluating represented the fewest coded excerpts in the analysis (n = 136, 16.7% overall). Evaluating was further broken down into: (a) evaluating IEP features or format and (b) evaluating IEP content. The former refers to expressing positive or negative feelings about the usability and/or accessibility of the document itself, whereas the latter is concerned with expressing positive or negative feelings about the quality and/or quantity of the information presented in the document.

Evaluating IEP Format and Features and Evaluating IEP Content. Evaluating content represented the vast majority of coded excerpts within the theme (n = 130; ~95% of evaluating overall). Participants expressed a mix of both positive and negative sentiments in their evaluations. Examples of positive evaluations included, "I'm noticing that the assessments have really good strategies written in them and that's not always true, so that's helpful" and "I'm just thinking like these are great tips." Examples of negative evaluations included:

> It [the behaviour assessment] isn't needed to be on there, but I mean as high school staff we often get IEPs with like extraordinarily outdated things, and we always question is that on there because it needs to be still or because no one ever took it off.

Sometimes statements were about the information participants were seeing in real time as they viewed the mock IEP, and other times they seemed to inspire statements about a section of the IEP in general. For example, several participants expressed a positive evaluation about the information provided in the mock IEP's transition plan (e.g., "So this transition plan is really

helpful after the first couple of points"). However, when another participant reviewed the transition plan, they expressed the following about transition plans more broadly:

> So the transition plan doesn't really mean a lot to me other than like it tells us sometimes, but I usually don't even see it in this, like what they're working toward. Maybe I'll see Ontario Secondary School Diploma, but it'll rarely say to pursue post-secondary opportunities in the trades or anything like that.

In addition to comments that were expressly positive or negative, some evaluative statements could be considered more neutral. For example, when reviewing the section describing the IEP team, one participant remarked: "People that made it, I'm surprised it was only one person that made it." Another example of a more neutral comment was: "It seems like a pretty standard IEP to me, particularly for a student who would be in a de-streamed program in Grade 9."

Connecting to Practice. One of the most prominent themes in the analysis (n = 243; 29.9% overall), connecting to practice was comprised of two main cognitive processes: (a) connecting and (b) active planning. Connecting included any instances where participants activated prior knowledge or recalled information relative to autism or the IEP, drew comparisons to their own teaching contexts, or found examples from the past. Active planning involved the use of information presented in the IEP to form, develop, or generate ideas that they could use in their instruction.

***Connecting*.** The connecting cognitive process represented the majority of excerpts coded to the theme (n = 209; ~86% of connecting to practice). Participants frequently drew comparisons to their school boards, schools, or students while viewing the different sections of the IEP. While viewing the human resources section, one participant paused to note, "And my board also, we don't put this piece about however many minutes people receive. That would only

be like highly specialized supports, but we wouldn't put the resource teacher or the guidance counselor on there." While viewing the assessment data, another remarked:

> The IEP in my board always starts with educational assessments that can only maintain educational assessments within the past 12-month academic year. And that sometimes just gives reading and math. I guess benchmarks gives an idea of where the student's at, but I don't see that in this, so we only have clinical assessments.

While comments about individual schools were less common, participants still connected their school's practices to the IEP, particularly as they related to procedures for identifying students as exceptional or placing them in a special education program. One participant remarked:

> So we don't have tons that are IPRC. Most of our IEP students at my school anyways are ones that have an IEP, but are kind of informal in the sense that they don't have an IPRC, so we still have to provide the accommodations but we're not doing an IPRC meeting for them.

While viewing the IEP development team, another remarked: "We also have these on our safety plans for our students at our school, we have who actually is developing the safety plan. So that looks really familiar to me." As for comments about students, some participants drew connections to their current caseload (e.g., "Most of my students have IEPs, but most are not identified"). One participant considered a student with autism who they were currently teaching relative to the accommodations presented in the IEP: "And I have a boy right now that is high functioning autistic in my French class, and he does fine. He doesn't need frequent breaks."

Active Planning. While active planning was represented far less often in the data (n = 34, ~14% of connecting to practice overall), some participants connected the information presented

in the IEP to their current or future instructional planning. In some cases, this was in relation to their curricular subject. One participant who taught English and music remarked:

> And I'm just looking at the reading assessment, so might need some extra support, such as breaking rhythm down if we're looking at poetry, or if they were in my music class, they might struggle with finding the beat in the music, so I would add, like visual cues in for that as well.

In addition to their teachable subject, participants discussed how students' social needs shaped their approach to planning. For example, one teacher commented:

> But I guess probably just like focus a little bit because I see that the social aspect is a little bit challenging. So if they're not known to the other kids in the class, I might spend some time trying to do some type of community building or getting them included in the classroom, or just taking time to get to know them as well.

Most often, however, participants' comments about planning were related to how they would implement a specific accommodation or teaching strategy relative to what they read in the IEP. As an example, one participant stated, "So, looking at that in my class I would be trying to have strategic seating and strategic partners with other students to help them with some of those social settings." Another participant noted about the pictorial schedule for transitions accommodation: "Transitions, having a schedule on the board, having a really consistent routine within the class, and then having some kind of an indication that a transition is going to be coming." Lastly, planning extended to participants' thoughts about collaborating with colleagues, families, and the students themselves. For example, several participants noted when and how they might reach out to parents in order to ask questions or build rapport. Reflecting on student involvement relative to the IEP, one participant reflected:

> I would just make sure that before talking about assessment, that I would have a conversation with that student, letting them know theirs may look different than what I'm sharing on the board, however, what I hand them is what they'll be working on.

Additional Findings from the Think Aloud Task. Although participants had 15 minutes to complete the think aloud task, the amount of time participants required to review the IEP and verbalize their thoughts varied. More than half of participants (n = 7; 58.3%) spoke for the full 15 minutes. It should be noted that of this group, five (representing 41.7% of total participants) did not make it through the full IEP and were cutoff with the timer, whereas two (representing 16.7% of total participants) did make it through the full IEP, but continued to verbalize their thoughts until the timer went off. The other participants (n = 5; 41.7%) stated that they were done the task before the 15 minutes was up, with completion time ranging from 5 minutes 57 seconds to 14 minutes 03 seconds. While these participants were prompted to continue talking (e.g., "I notice you skipped the transition plan. Can you go back to that section and tell me what you're thinking?"), this meant the average time participants spent on the think aloud task before prompting was 13:08.

A Conceptual Model of Teacher Engagement with the IEP in Their Instructional Planning

Using the themes constructed through the inductive and deductive analyses, Figure 4.4 presents a cyclical model of how teachers engage with the IEP in their planning to support secondary students with autism in general education classrooms. In the first part of the model, approaching the IEP through an individual lens, participants enact various lower (e.g., reading) and higher order (e.g., analyzing) engagement behaviours (i.e., cognitive processes) to make sense of the IEP. As they do this, participants must be metacognitively aware, noting their procedural behaviour (e.g., which sections of the IEP they review first), and reflecting on and

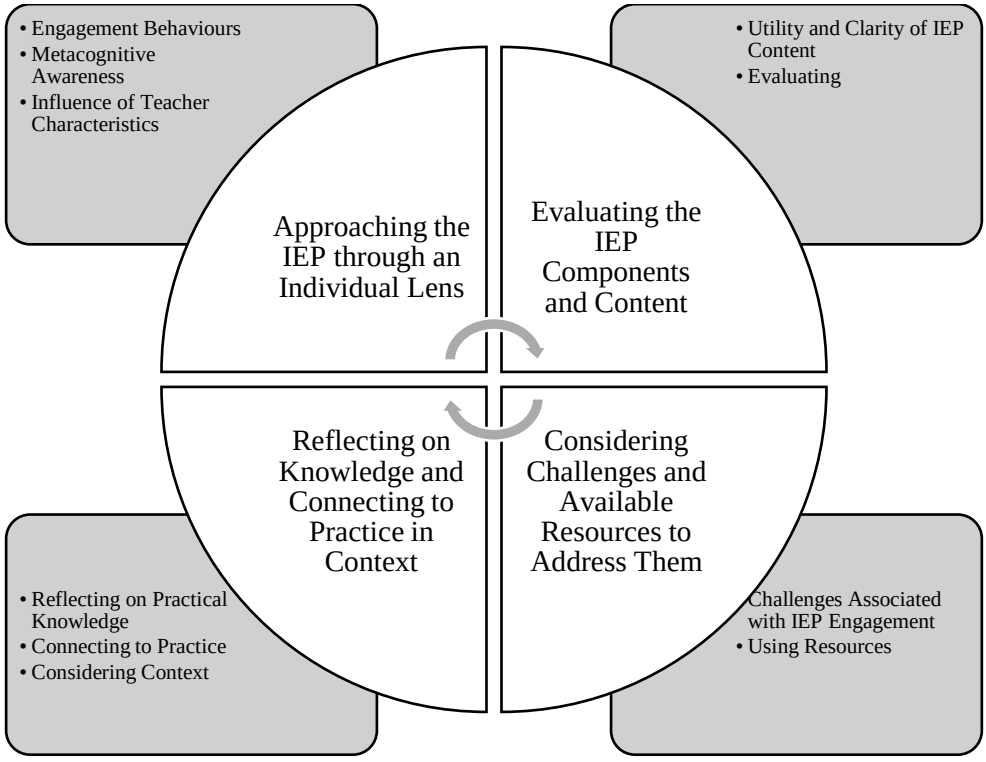
reasoning about these decisions. Implicit in this process is the influence of teachers' characteristics, including their own initial teacher education and any additional training and experience they have garnered over time. Through these unique lenses, teachers move to evaluating the IEP and its components, considering utility and clarity (i.e., what they consider to be useful, not useful, confusing, or irrelevant to them). Following their evaluations, teachers move to considering challenges and resources available to address them. Challenges may be related to implementation, the limitations of their own training, and key differences between the elementary and secondary panels that they must navigate, such as perceived inappropriateness of specific accommodations. To move forward, teachers reflect on practical knowledge and connect to practice. For the former, this might be their knowledge of autism and UDL; for the latter, this might be school or student-specific considerations. As teachers engage in this part of the cycle, they consider their current or past practice, comparing what they see in the IEP in front of them to what they might have seen or experienced previously. This can lead to active planning whereby teachers begin to think about how they will apply the information in the IEP to their instruction. Though the extent to which teachers return to the IEP varies on an individual basis, teachers will eventually return to the beginning of the cycle, approaching and re-approaching IEPs as they see fit.

The relative weight of the themes within each model component can be considered to vary for two reasons. First, the extent to which the themes were represented in the individual transcripts naturally varied, pointing to individual differences in how teachers engage with IEPs in their planning. Second, there are known differences in how novice and experienced teachers plan (Koni & Krull, 2018; Pilar & Leijen, 2015), with those in the latter group believed to have more elaborate knowledge structures about their students, the curriculum, and instructional

strategies (Anderson, 1976; Borko et al., 1990; Carter et al., 1987). However, when it comes to the IEP, evidence from the present study indicates that a teacher's experience could influence their planning in either direction. For example, within the first component of the model, approaching the IEP through an individual lens, the relative importance of the engagement behaviours theme is likely to vary according to a teacher's prior IEP exposure. Those with more exposure, or more experience, might recognize the value of specific sections of the IEP, leading to increased engagement. Conversely, those with more exposure may also feel they have sufficient knowledge of some IEP sections and skip them, leading to decreased engagement. As such, the ways in which teachers engage with the different components of the model—and the emphasis on different themes within each component—will vary on an individual basis, with some of that variation a product of their experience. See Figure 4.4.

Figure 4.4

A Conceptual Model of Teacher Engagement with the IEP in Their Instructional Planning



Chapter 5: Discussion

The purpose of this study was to examine how general education teachers engage with IEPs for secondary students with autism in their planning from a variety of angles. Specifically, this research addressed four main research questions: (1) What are general education teachers' perceptions of the IEP for secondary students with autism in inclusive classrooms? (2) How do general education teachers perceive their preparation to implement an IEP for secondary students with autism in inclusive classrooms? (3) What relationships, if any, exist between general education teachers' demographic characteristics (e.g., years of experience), perceptions of the IEP, and preparation to implement it for secondary students with autism in inclusive classrooms? And (4) How do general education teachers use IEPs in their planning to support secondary students with autism in inclusive classrooms? Analysis yielded several findings related to the research questions and shaped the development of a conceptual model for understanding how teachers engage with the IEP in their instructional planning. Findings in this chapter are discussed as they relate to the research questions, but also relative to one another and in the context of the literature. The chapter concludes with a description of the study limitations and implications for research, policy, and practice.

Teachers' Access to and Engagement with the IEP

Overall, findings related to teachers' general access to and, in turn, their engagement with IEPs for secondary students with autism were similar to those of Rotter (2014), the originator of one of the instruments used in the survey. Given the differences in special education licensure in the US (Goldman & Gilmour, 2021), Rotter (2014) compared findings from certified special and general education teachers. Conversely, the present study focused on general education teachers, though many of whom had undertaken AQs or other training related to special education.

Considering this, it is worth highlighting a few key differences in the findings from the present study and Rotter's (2014).

First, a greater proportion of participants in the present study reported accessing the IEP within days of receipt than both groups in Rotter's (2014) sample. For the most part, though, participants in the present study reported accessing or engaging with some aspects of the IEP more than the general educators in Rotter's sample, but less than the special educators. For example, teachers in the present study reported taking and reviewing notes on a student's IEP more often than the general educators in Rotter's study, but less often than the special educators.

One possible interpretation of this finding relates to teacher training and licensure in the different research contexts. Teachers in Ontario are initially trained and licensed as general education teachers and can then pursue AQs in special education. By contrast, in Rotter's (2014) research context, general and special educators are initially trained and licensed as such. In the present study, a substantial proportion of participants made clear through the survey's open-ended responses that they considered themselves to be both general and special education teachers simultaneously due to their current teaching assignments. That is, several held a SERT role as part of their contract or taught both general and special education courses in the same semester. Thus, while the present study findings were somewhat in between those of the general and special educators in Rotter's (2014) sample, this may reflect the more dual nature of teachers' roles in Ontario, where most students receiving special education supports and services are educated in the general education classroom (Government of Ontario, 2025). This may be particularly true of the growing population of students with autism, who are increasingly represented in general education classrooms across the province (Minuk et al., 2024). In other words, general education teachers in Ontario may turn to IEPs sooner and more often given their

increased responsibilities related to special education inherent to their teaching assignment (McCrimmon, 2015) or the number of students with autism in their classrooms. While it is possible that teachers in both samples might also have philosophical differences related to their views of the IEP and its importance, the present study does not provide any evidence of this.

While Ontario teachers' responsibilities related to special education are not new, they are increasing. Recently, several school boards have shuttered special education programs, citing a move toward more inclusive practices in line with provincial policy (e.g., Wilson, 2025). Specifically, the last several years have seen a push from the OME to incorporate UDL and differentiated instruction into general educators' everyday practice (Killoran & Parekh, 2017) in an effort to promote learning for all (OME, 2013c). While findings from the survey largely demonstrated that general education teachers in Ontario are accessing and engaging with students' IEPs, indicating that they are generally managing this responsibility, issues remain. For one, even though all teachers can expect to have students with IEPs in their classrooms per provincial policy, there is currently no requirement for teachers to undertake any additional training related to special education nor the IEP (Killoran & Parekh, 2017). While the literature has established training as essential for teachers' self-efficacy related to inclusive practice and, by extension, implementation of IEPs (Herzig Johnson, 2023; Love et al., 2020; Matthews et al., 2023; Metsala & Harkins, 2020; Wray et al., 2022), more research exploring this connection is needed in the Canadian context. Thus, the finding that teachers are promptly accessing IEPs for secondary students with autism and highly engaged in behaviours such as note-taking and review is positive and promising. However, the recent and relatively sudden closure of some special education programs in different parts of the province (e.g., Limestone District School Board, 2025; Ottawa-Carleton District School Board, 2025) reinforces the fact that Ontario teachers

have additional responsibilities related to supporting students with disabilities compared to those in other contexts, and underscores the need for targeted teacher training opportunities (Crispel & Kasperski, 2021; McCrimmon, 2015), including those related to the IEP.

Delayed IEP Access as a Barrier to Planning and Implementation

Despite consistent access to and high engagement with IEPs for secondary students with autism, more than half of survey participants reported that they only gained access to IEPs after the school year had already begun. Participants also cited delays in IEP access as the second most common barrier to their use of the IEP in their instructional planning. While it is not uncommon for teachers to receive IEPs at the beginning of the school year (Rotter, 2014), and understandable for access to be delayed due to privacy or logistical reasons (e.g., during the transition from one school to another), given what is known about teacher planning, it is necessary to re-examine policy and procedure around this.

Long-term plans are one of eight types of planning that teachers undertake (Clark & Yinger, 1979). For many, long-term planning takes the form of an annual plan whereby teachers reflect on previous years' practice, engage with curriculum documents and relevant resources, determine appropriate sequencing of content, anticipate how students will respond to learning, and consider their school's current calendar (Hall & Smith, 2006). Moreover, teachers' long-term planning tends to work recursively with their short-term planning (e.g., unit plans and lesson plans), with long-term planning essential to evaluation of students' progress towards their goals (Beschorner & Woodward, 2019; Miller & Veatch, 2010; Wiggins & McTighe, 2005). While more recent data is needed, the Organization for Economic Cooperation and Development (OECD; 2015) found that, on average, teachers internationally spend approximately seven hours per week planning. Within a 40-hour work week with about 30 hours devoted to instruction, this

leaves little time for other essential activities, such as assessment and evaluation, collaborating with colleagues, communicating with families, or general administrative duties (Merritt, 2017).

With this in mind, it could be considered untenable to expect teachers to do their long-term planning after the school year has started, but also, inefficient for them to do so without the critical information in IEPs. For one, IEPs contain information about curriculum modifications for students with disabilities. These grade-level changes to students' learning expectations require the use of entirely different curriculum documents in teachers' planning (OME, 2022b). In an example provided by the OME, a significantly modified expectation for a secondary-aged student might have them working at a Grade 4, 5, or 6 level in math. Thus, teachers would need to consult the elementary curriculum to determine the specific learning expectations from the curriculum, map those onto their existing plans, and then differentiate materials for both instruction and assessment (Hall et al., 2004). Moreover, in keeping with an inclusive philosophy, teachers must plan to incorporate modified curriculum content without stigmatizing students for working on something "different" to their peers. While few studies have been conducted on how teachers plan to enact curriculum modification, according to Hall et al. (2004), it places increased demands on teachers' time and energy "as they shift from modifying instructional methods for accommodated curriculum to creating individual lessons for overlapping curricula with application in general education lessons with overlapping goals" (pp. 10-11). As almost a quarter of secondary students in Ontario have an IEP (Government of Ontario, 2024b; People for Education, 2024), it is likely that teachers would need to substantially revise their plans, both long and short-term, after IEPs are received. Taken with the survey finding that most teachers only gain access to students' IEPs a few days or weeks into the school

year, the extent to which IEP content can be meaningfully and effectively incorporated into teachers' long-term plans is questionable.

Electronic Tools and the IEP: A Trade-off

Although survey respondents reported that they generally found IEPs relatively easy to access, almost all participants opted to complete the open-ended item asking about barriers. In addition to delayed access as described above, the most commonly cited barrier to accessing the information in the IEP was related to the IEP software or website that their school board used. This was either due to technical difficulties with the IEP software or website itself or perceived lower IEP quality related to the use of electronic IEP tools.

In terms of technical difficulties, this finding is not necessarily aligned with the literature, which tends to emphasize both the benefits of using electronic IEP tools for collaboration or the drawbacks of potentially lower quality IEP content, described in more detail below (Giangreco, 1994; More & Hart Bennett, 2014; Rotter, 2014). However, it is reminiscent of some of the earliest research on teachers' access to and engagement with IEPs. Specifically, in a survey of 250 teachers of students with learning and emotional/behavioural disabilities, 86% of participants reported that IEPs at their school were locked away in a filing cabinet (Dudley-Marling, 1985). Unsurprisingly, most teachers in Dudley-Marling's study concluded that, because of this, IEPs were of little use to their instructional planning. While fewer than five percent of participants in the present study reported receiving a print copy of the IEP, technical difficulties associated with electronic IEP tools may have led the "locked cabinet" issue to persist today. That is, in both study phases, participants considered IEP software to be a barrier to accessing and meaningfully engaging with IEP content. Specific reasons for this included a lack of remote access as well as challenges navigating unnecessarily complicated programs. During

the think aloud task and interview, a few participants remarked that they felt confident using their board's electronic IEP tools but explained that the software changed every time they became comfortable with it. While early investigators of IEP access might be pleased to see such prolific use of electronic IEP tools, some cabinets in Ontario may still be difficult to open.

In terms of quality, research has established that using electronic IEP tools can lead to less individualization, with some websites and software treating the IEP as a generic form containing pre-determined options to populate sections (Kurth et al., 2022; More & Hart Bennett, 2014; Rotter, 2014). The use of these forms may be associated with the development of lower quality content and, subsequently, decreased teacher engagement with the IEP (Giangreco, 1994; More & Hart Bennett, 2014; Rotter, 2014). This was reinforced in the findings from both the survey and the think aloud task, with participants in the latter skipping over some sections of the IEP altogether (e.g., the transition plan), citing the use of generic language as the reason. Therefore, not only is the cabinet still locked, but teachers may be less motivated to gain access due to their perceptions about the quality of the IEPs inside.

Teachers' Perceptions of the IEP

Similar to Rotter's (2014) original survey, teachers in the present study were asked to rate the usefulness of various components of the IEP relative to their instructional planning to support students with autism. As the present study adapted some of the language in the original instrument to better suit the Ontario context, not all of the findings are directly comparable. However, in both surveys, teachers rated the accommodations section as the most useful. While participants in Rotter's survey were not asked to rate the transition plan, in the present study, teachers rated its components (i.e., goals, actions required, persons responsible for actions, and timelines) to be among the least useful components. Survey findings were aligned with those

from the think aloud task and interviews. Specifically, in phase 2 of the study, participants persistently vocalized that they often started with the accommodations section or spent the most time there and often skipped the transition plan. In the sections that follow, findings pertaining to specific IEP components (i.e., accommodations, transition plans, and relevant assessment data) are discussed in the context of current research.

Instructional, Environmental, and Assessment Accommodations

Instructional, environmental, and assessment accommodations are a staple of the IEP and thus a legal right for students with disabilities in Ontario (O. Reg 181/98). Since accommodations are widely accepted as useful in facilitating the inclusion of students with diverse strengths and needs in general education classrooms (Kurth et al., 2020b; Tremblay & Belley, 2017; Wehmeyer, 2006), the finding that teachers in the present study rated them as highly useful is unsurprising. However, a related finding from the think aloud task and interviews revealed that teachers found several specific accommodations to be either confusing or unfamiliar (e.g., reduction in the number of tasks used to assess a concept or skill, word retrieval prompts, visual cueing, etc.) or infeasible to use at the secondary level (e.g., minimizing background noise, quiet setting, strategic seating, frequent breaks, alternative workspace, etc.). This finding raises questions about the extent to which IEP accommodations are being both planned for and implemented effectively, as well as teacher training to use them.

There are over 60 instructional, environmental, and assessment accommodations that teachers in Ontario can provide to students (OME, 2017). There is some overlap among these accommodations (e.g., assistive technology is both an instructional and assessment accommodation; Shurr & Minuk, 2023). Yet, in Ontario and elsewhere, neither legislation nor policy provide teachers with adequate guidance for selecting the most appropriate

accommodations or implementing them in practice (Harrison et al., 2013; Leifler et al., 2021). To date, research related to accommodations has primarily focused on topics such as student advocacy (e.g., Hart & Brehm, 2013) and their use in assessment and evaluation (Lin & Lin, 2018; Thompson et al., 2018; Wickstrom et al., 2020; Xu & Kuti, 2024). Additionally, several studies of accommodations have focused on specific populations of students, such as those with emotional/behavioural disorders (e.g., Harrison et al., 2013; Kern et al., 2019), learning disabilities (Fuchs et al., 2005; Lovett & Nelson, 2021), intellectual disability (e.g., Barr & Mavropolou, 202; Thompson et al., 2018, 2020) and giftedness (Lin & Lin, 2018). In a systematic review of the research related to accommodations for students with autism published between 1994-2019, Leifler et al. (2021) only found 14 studies of sufficient quality, with the most recent ones published in 2016. It should be noted that all 14 studies were conducted in either the US or Europe and had relatively small sample sizes, somewhat limiting their generalizability to other contexts (Leifler et al., 2021).

As for studies focused on assessment accommodations, there is agreement in the literature that accommodations are necessary for students with disabilities to participate in mandatory high-stakes testing (Fuchs et al., 2005; Kern et al., 2019). While Ontario currently only has one high-stakes standardized test (i.e., the OSSLT), it is of critical significance, determining whether students graduate with a high school certificate or diploma and can pursue certain post-secondary pathways (Merchant et al., 2020). However, a recent report published in Ontario focused on reading disabilities highlighted several issues with the current approach to implementing accommodations in Ontario, including ineffective assistive technology, a lack of individualization, and stigmatization (OHRC, 2024).

More broadly, research from the field of inclusive education indicates that all accommodations—assessment, instructional, and environmental—are essential to students' learning, facilitating their inclusion in the general education classroom and access to age-appropriate curriculum (Ainscow & Messou, 2018; Doyle & Giangreco, 2013; Kurth et al., 2020; Wehmehyer, 2006). Teachers' ability to effectively identify and implement appropriate accommodations at the secondary level is thus critical for several reasons, influencing students' participation in both influential assessments as well as education in general. Considering this, the study finding that teachers find accommodations to be the most useful component of the IEP yet face implementation challenges with specific ones is concerning. Moreover, the fact that these challenges seem to relate specifically to teaching at the high school level speaks to the need for more research with secondary-aged students with autism and other disabilities (Test et al., 2014). Until this research gap is addressed, and policy recommendations for selecting and implementing IEPs in practice are produced, Ontario teachers can turn to practitioner-oriented resources (e.g., Shurr, & Minuk, 2023). Such resources can help teachers distinguish between seemingly similar accommodations (e.g., minimizing background noise and quiet setting) and make sense of ones that might be more complex to plan for (e.g., reduction in the number of tasks used to assess a concept or skill).

The Transition Plan

Another finding from both study phases that raises questions about teachers' perceptions of the IEP relates to the transition plan. While not yet a requirement of IEPs internationally (Mitchell et al., 2010), in recent years, research related to transition plans has proliferated (e.g., Findley et al., 2022; Kraemer et al., 2022; Johnson et al., 2022). These studies have examined the

transition plan from several angles, including transition plan quality (e.g., Ruble et al., 2019) and student involvement in the transition plan process (e.g., Raley et al., 2023).

For secondary students with autism, who have poor post-school outcomes compared to their peers with other disabilities (e.g., lower rates of employment; Findley et al., 2022), the importance of the transition plan cannot be overstated (Cavendish et al., 2020; Patton & Kim, 2016). Moreover, its importance has been recognized and reinforced in Ontario, with transition plan requirements expanded in 2000 through PPM 156 (OME, 2013a, 2022b). Qualitative findings from the think aloud task and interviews provided some insight into why survey respondents might have rated the transition plan as among the least useful IEP components. Specifically, during the think aloud task and interview, several participants noted that the transition plan was not necessarily relevant to their role as a classroom teacher, stating that it was often in the hands of their school's guidance counsellor or SERT. Moreover, several participants stated that the way transition plans were written in their school board lacked individualization and thus failed to convey any useful information to them. This is aligned with Findley et al.'s (2022) finding that teachers perceive transition plan quality as relatively low, typically due to a lack of cohesion with other IEP components, scoring an average of 10.5 out of a possible 20 points. It also connects to the finding that the use of electronic IEP tools has led to the creation of more generic, less individualized content over the years (Kurth et al., 2022; More & Hart Bennett, 2014; Rotter, 2014).

The finding that teachers perceived the transition plan to be of so little use and/or relevance to their roles is concerning. While it is understandable as to why the responsibility may seem more suitable for a guidance or special education department, to be effective, transition plans require collaboration amongst professionals (Lillis et al., 2022; Murphy & Thomas, 2004).

All secondary teachers should be considering the post-school plans of students with IEPs in their teaching, using instructional methods and materials that promote the development of self-determination skills (Raley et al., 2023). Considering the potential of the transition plan to facilitate students' inclusion in post-school settings, and the importance of this for students with autism specifically (Findley et al., 2022), findings from the present study warrant further attention in both research and policy. This might include the development of standards to improve transition plan quality, as well as guidance for teachers in aligning transition plan content with aspects of their instruction.

Relevant Assessment Data

Participants had somewhat mixed perceptions of the relevant assessment data section of the IEP. While it was rated as among the more useful IEP components on the survey, and participants generally spoke highly of it during the think aloud task and interviews, some commentary raised concerns. For one, some teachers expressed a lack of time to properly review the information provided in the full psychoeducational or clinical reports, relying solely on the summaries in the IEP. While this is generally aligned with studies that indicate increasing demands on teachers' time related to special education (e.g., Hester et al., 2020), a systematic review of the literature on teachers' perceptions of psychoeducational reports offers a different perspective. Specifically, Umaña et al. (2019) identified 19 studies summarizing 1,309 teachers' preferences for psychoeducational reports. Overall, teachers preferred reports that were longer and more descriptive, indicating that additional details enabled them to more effectively implement individualized instruction and supports (Umaña et al., 2019). It is therefore important that teachers are accessing the full, more detailed reports in addition to the summaries of relevant assessment data in the IEP.

Moreover, during the think aloud task, some participants indicated that they did not always know how to interpret the information in the psychoeducational reports. These findings are aligned with those from a recent survey of 349 general and special educators in the US, where two thirds of participants reported skipping sections of psychoeducational reports due to the use of jargon and difficulty understanding the information in them, among other reasons (e.g., limited utility of recommendations; Hale & Brown-Chidsey, 2022). Related, in an Australian study involving both teachers and psychologists with varying amounts of experience, Fletcher et al. (2015) found that teachers were more satisfied after reading reports that contained fewer technical terms. Rahill (2018) proposes 10 recommendations for increasing readability of psychoeducational reports, such as organizing results based on areas of strength or need rather than specific test, including graphs or other visual displays to convey information, and including psychologists' interpretation of assessment data. These recommendations can promote teachers' engagement with the full reports in addition to what is highlighted in the summaries of relevant assessment data in the IEP.

Teachers' Perceptions of their Preparation to Implement the IEP

Despite the somewhat mixed findings about teachers' perceptions of IEP accommodations discussed above, the survey revealed that, of the scale items related to inclusive education, teachers felt most prepared to provide accommodations compared to other IEP-related actions and responsibilities. This was aligned with Zagona et al.'s (2017) findings, the original source of the second instrument used in the survey. However, teachers in the two studies differed in terms of what they perceived themselves to be least prepared to implement. In the present study, this was data collection procedures to monitor individual student progress, whereas in Zagona et al.'s investigation, this was individualizing evaluation criteria.

Additional findings of interest relate to teachers' perceived preparation for various aspects of collaborative practice relative to the IEP. Specifically, of the scale items related to collaboration, teachers in both the present study and Zagona et al.'s rated their preparation to collaborate with learners and their families the highest. Related, in phase 2 of the present study, teachers tended to value their collaboration with colleagues the most in terms of their preparation to implement IEP-related actions and responsibilities, framed initially as engagement with human resources. These findings are discussed below relative to one another and in the context of the relevant literature.

Actions and Responsibilities Associated with the IEP

Data Collection and Progress Monitoring. The finding that teachers in the present study rated their preparation to use data collection procedures and monitor individual student progress the lowest might be explained by differences related to teacher training. In the US, the location of Zagona et al.'s (2017) study, the content of special education teacher training substantially differs to that of relevant Bachelor of Education or AQ courses in Ontario (Mau et al., in press; McCrimmon, 2015; McLeskey, 2017; McLeskey & Brownell, 2015). Specifically, in the US, teachers are trained on assessment as a high leverage practice for special education (McLeskey, 2017). According to McLeskey, this includes using multiple sources of information to understand a student's strengths and needs, analyze the effectiveness of instruction, and make changes accordingly (McLeskey, 2017). In a content analysis of Bachelor of Education courses related to special or inclusive education in Ontario, no such course content was identified (Mau et al., in press).

The American focus on assessment and data collection in teacher training is primarily a product of the No Child Left Behind Act of 2001, which emphasized schools' accountability

related to special education. This meant that, for students with disabilities, progress was no longer monitored through IEPs alone but through mandatory progress reporting for each state (Vannest et al., 2008). Moreover, for the first time, students with disabilities were included in state assessments with modified content as appropriate, promoting consistency in curricular standards for all students. Similarly, IDEIA (2004) emphasized schools' accountability in ensuring students' access to the general curriculum and the use of data-driven decision-making in all aspects of a child's education.

While Ontario does have some standardized testing and reporting requirements (i.e., Education, Quality, and Accountability Office [EQAO] assessments), students with IEPs can be exempt from participating (People for Education, 2017). Moreover, since curriculum modifications are largely in the hands of individual schools and teachers (OME, 2022b), academic standards for students with disabilities are likely to vary. Considering these contextual differences, it is likely that teachers in the present study—all of whom were certified through an Ontario teacher education program—would have had less exposure to data collection as a special education practice in their initial teacher training. Additionally, Zagona et al.'s (2017) instrument focused on various disabilities, while the present study focused on autism only. It is thus possible that teachers in the present study might feel more equipped to implement data collection procedures with other disability populations.

In any case, the finding is noteworthy as an area of need for both research and practice. Teachers' use of data collection to monitor students' progress towards their individual goals is an essential part of the IEP process, enabling decisions to be made about the effectiveness of a student's educational program (Etscheidt, 2006; McLeskey, 2017). Despite its importance, data collection and progress monitoring have received relatively less attention in the literature than

other IEP components (Blackwell & Rossetti, 2014). However, it is the focus of several practitioner articles (e.g., Jasper et al., 2015; Kim & Hardy, 2024; Rojo et al., 2021), which provide readers with a step-by-step overview of the process.

Family and Student Collaboration. While teachers in both the present study and Zagona et al.'s (2017) original survey reported that they felt most prepared to collaborate with learners and their families, there is substantial evidence that such collaborations have a long way to go (Kurth et al., 2020a; Love et al., 2017; Sanderson & Goldman, 2021). While family collaboration is considered an essential competency for teachers of students with autism and developmental disabilities (Shurr et al., 2022; Shurr et al., 2024), several studies have established parent input in the IEP process as limited (Cavendish & Connor, 2018; Kurth et al., 2020a; McKenna et al., 2023). This is especially true for culturally and linguistically diverse families, who face unique challenges when it comes to their collaboration in the IEP process (e.g., limited access to information about the IEP; Rossetti et al., 2020).

Though there is a somewhat smaller body of literature related to student involvement in the IEP process, the findings are similarly concerning, with one large-scale study finding that less than half of students attended their last IEP meeting (Sanderson & Goldman, 2021). These findings are significant in the Ontario context, where it is a legal requirement to involve students aged 16 and older in the IEP process (O. Reg. 181/98; OME, 2017) and to engage students of all ages in their education (O. Reg. 224/23). The importance of involving learners and their families in the IEP process is indisputable (Kurth et al., 2019c, 2020a, Love et al., 2017; Cavendish et al., 2020; Sanderson & Goldman, 2020). However, the finding from the present study that teachers feel most prepared to collaborate with learners and their families seems to contradict the existing

literature. Multi-stakeholder studies that capture student, parent, and teacher perspectives on this process would be highly valuable in the Ontario context.

Resource Engagement Relative to the IEP

Findings from the think aloud task and interviews revealed that teachers consider the use of various resources when expanding their practice related to the IEP and/or supporting students with autism. In the present study, teachers expressed a strong preference for human or relational resources and, specifically, colleagues or peers with a background in special education. While this is aligned with findings from related special education research (e.g., Shurr et al., 2024), it diverges from studies of teacher professional learning more broadly.

Especially in recent years, there is evidence that teachers are increasingly turning to the internet for their professional learning (Beach et al., 2021b; Minuk et al., 2023). In a study of teachers' engagement with online professional development, Beach et al. (2022b) found that teachers accessed more than ten different forms of online professional learning, such as instructional videos. Several studies have also indicated that teachers are taking to social media or blogs to expand their practice (Beach, 2020; Goodyear et al., 2019; Prestridge, 2019; Xu et al., 2024). While this is concerning for a few reasons, such as questions of quality and the extent to which resources are evidence-based (Beach, 2020; Minuk et al., 2023), they were rarely referenced in the present study. This is a positive finding, but it should be considered in context. That is, teachers are not getting their information about the IEP from potentially unreliable internet sources, but they are not necessarily getting it from other outside (e.g., journals, books) or internal (e.g., school, board, or provincial policy) sources either. One interpretation of this relates to teachers' motivation. With formal or informal professional learning on more traditional topics (e.g., curriculum), teachers' motivations can vary, and engagement is often at will (in de

Wal et al., 2014). Conversely, teachers may be more likely to feel the pressure to "get it right" with the IEP given its legal implications, leading them to seek out others in the field to check their understanding and ensure they are following appropriate protocols. However, a reliance on human or relational resources is potentially problematic as it could lead to variation in teachers' IEP and autism-related knowledge and, in turn, inconsistencies in their approach. This could be due to differences in the knowledge, background, training, or perspectives of their go-to colleagues, or even differences in relationships. In any case, these findings suggest that teachers may engage with professional learning related to the IEP and autism differently than they do other topics.

Relationships between Teacher Characteristics, Their Perceptions of the IEP, and Their Preparation to Implement It

The correlation analysis revealed weak to moderate but statistically significant relationships between teachers' years of experience (both in general and teaching students with autism), autism caseloads over time, and their perceived preparation to implement IEP-related actions. That is, as participants' years of teaching experience and autism caseloads increased, so too did their perceived preparation to implement their IEP-related responsibilities. These findings, though unsurprising, fit well with related research examining the relationship between teacher self-efficacy and IEP outcomes for students with autism (Love et al. 2020).

Teacher self-efficacy refers to an educator's beliefs in their ability to influence student outcomes (Soodak & Podell, 1996; Wheatley, 2005). Research investigating teacher self-efficacy is expansive (Skaalvik & Skaalvik 2007; Zee & Koomen, 2016) and, in recent years, it has been increasingly represented in the autism literature (e.g., Devi & Ganguly, 2024; Love et al., 2020; Ryan & Matthews, 2022). As an example, in a study of 44 special education teachers in the US,

Love et al. (2020) found that teacher self-efficacy for teaching students with autism is positively associated with students' attainment of IEP goals—a finding consistent with more general studies of teacher self-efficacy and student attainment (Zee & Koomen, 2016). Conversely, low teacher self-efficacy for teaching students with autism is associated with higher levels of stress and increased likelihood of teacher burnout (Boujut et al., 2017).

Though the present study sought to measure teachers' perceived preparation to implement IEP-related actions and responsibilities and not necessarily their self-efficacy, this construct may have been implicated. That is, it is possible that participants with more experience supporting students with autism had higher self-efficacy, thus rating their preparation to implement IEP-related actions and responsibilities higher on the survey. Self-efficacy is also considered essential for both pre- and in-service teachers' use of inclusive practices (e.g., Charles et al., 2023; Herzig Johnson, 2023; Specht et al., 2016; Woodcock et al., 2022, 2023; Wray et al., 2022), further reinforcing its potential importance to the present study. Thus, the finding that teachers' experience working with students with autism was significantly related to their perceived preparation to implement various IEP-related actions may implicate self-efficacy as a potentially moderating variable.

Teachers' Use of the IEP in Their Planning

The remainder of this section is devoted to unpacking the findings related to how teachers use the IEP in their instructional planning. While discussion will mostly focus on the conceptual model presented in the results (see Figure 4.4), one sub-theme warrants some special attention: knowledge of UDL and inclusive practice. Throughout the think aloud task and interviews, participants referenced UDL and inclusive practice as it related to their use of the IEP in their instructional planning. More specifically, participants frequently commented that some of the

accommodations or teaching strategies listed in the mock IEP were already a part of their regular practice, making them somewhat less meaningful to their planning. This is in line with Ontario's current special education policy (OME, 2017), which states that "accommodations described in the IEP should include only those strategies that differ from the ones that are regularly provided during instruction" (p. E38). However, it is necessary to distinguish between where UDL ends and the IEP begins (Shurr & Clark, in press). The IEP constitutes a legal right in Ontario (O. Reg. 181/98)—one that cannot be replaced by even the best and most inclusive classroom practice. It represents both a collaborative process and product, containing firm commitments to supporting a student's education and should be considered essential in helping them to attain their goals. While UDL is recognized as essential for some, but beneficial for all (CAST, 2024), it is exactly that—*essential for some.* While teachers in this study were well-aware of their legal responsibilities related to the IEP, school boards must be careful not to undermine these important documents by simply making certain accommodations (e.g., extended time limits) available to everyone. To use one participant's words, teachers need sufficient guidance on "the difference between 'you have to do this for everybody, but this kid, you *really* have to do it for.'"

Fitting the Proposed Conceptual Model with Existing Planning Frameworks

As noted above, thematic analysis of the think aloud and interview data resulted in the construction of a conceptual model for understanding teachers' use of the IEP in their instructional planning to support secondary students with autism in general education classrooms. This model re-organized the six themes from the inductive analysis and four themes from the deductive analysis into a four-stage cycle: (a) approaching the IEP through an individual lens, (b) evaluating IEP components and content, (c) considering challenges and resources available to address them, and (d) connecting to knowledge and practice in context. As

some of the findings related to the stages in this model have already been addressed in this chapter relative to other research questions, discussion will focus on where this model fits within the current research rather than its individual components.

Teacher planning is an aspect of teacher cognition (Borg, 2003). As such, planning is the product of complex cognitive processes that shape teachers' decisions about instruction (Borko et al., 1990). Thematic analysis in the present study began with Beach and Willows' (2017) and Krathwohl's (2002) respective lists of cognitive processes to characterize teachers' verbalizations as they completed the think aloud task, a simulated planning exercise. Data coded based on these frameworks resulted in the generation of four themes that grouped teachers' cognitive processes: (a) engagement behaviours, (b) metacognitive awareness, (c) evaluating, and (d) connecting to practice. While some themes were represented in the data more prominently than others, with engagement behaviours represented the most and evaluating the least, overall, the cognitive processes comprising the themes adequately captured all of the data. It should be noted, however, that in the present study, active planning was among the cognitive processes least represented in the coded excerpts. While this is surprising given the use of a simulated planning task, Beach and Willows (2017) similarly found planning to be the least represented cognitive process in their study's concurrent think aloud condition. Considering this, it is possible that the under-representation of active planning reflects a methodological limitation of the concurrent think aloud and the challenges inherent in studying a complex cognitive process such as planning, which is simply difficult to do with a timer and an audience. Teachers in the present study were also asked to plan to support a fictional student, potentially limiting the extent to which they were motivated to engage in active planning. However, simulations have been shown to be

effective in estimating teacher training and behaviour (Qualls et al., 2024), indicating their potential for continued use on research related to teachers' engagement with the IEP.

It is also worth noting that the four themes from the deductive analysis overlap with themes from similar studies. For example, Beach et al. (2020) identified planning, monitoring, and evaluating as themes characterizing teachers' navigations during self-directed online learning, with connecting to practice a prominent sub-theme. Additionally, Beach et al. (2021a, 2022a) used metacognitive awareness and evaluating as themes, with some of the same sub-themes captured as cognitive processes in the present study. A key difference between these and the present study, however, is that Beach et al. identified self-efficacy as a major theme, whereas it was only somewhat implicated in the analysis of the think aloud and interview data (though, as noted above, a potentially moderating variable based on the survey). When self-efficacy did come up in the think aloud task and interviews, this was mostly in the context of teachers' reflections on their training and experience. This is in contrast to Beach et al.'s work, whereby self-efficacy was characterized through goal-setting, personalizing, enhancing knowledge, and vicarious learning.

Considering the IEP is a legal document, inevitably, teachers engage with it differently than they would a professional learning website, per Beach et al.'s (2020, 2021a, 2022a) research. With more traditional or even self-directed forms of professional learning, teachers do not always make use of all of the possibilities in their environment, with teachers' motivation influencing their engagement (in de Wal et al., 2014). With the IEP, however, which represents a legal responsibility, teachers may be more aware of the knowledge they do or do not possess, and the importance of that knowledge. Some thematic differences characterizing teachers' thought processes in these different contexts are therefore expected.

One of the most comprehensive frameworks for teacher planning is Yinger's (1980) three-stage model of problem-finding; problem formulation/solution (design); and implementation, evaluation, and routinization. This model is explained in detail in the introduction and substantially shaped the research design and interpretation of study findings. Specifically, in stage 1 of Yinger's model, problem-finding, teachers are influenced by the curriculum and resources, the characteristics of their students, and the teaching environment and school organization. While these were difficult to control for in the present study's simulated planning task, the mock IEP and scenario that participants were given was designed to address at least the first two factors. It also became clear through analysis that participants were, in fact, highly influenced by their school organization, captured in the considering the IEP in context theme. Thus, findings from the present study were well-aligned with Yinger's model, despite the present study's focus on the IEP as the planning dilemma.

Related, Borko et al.'s (1990) research on teachers' thinking about instruction is highly relevant to the present study's findings. According to Borko et al., teachers' characteristics substantially influence their planning. This was considered in the survey design and subsequent correlation analysis. It was also represented in the inductive analysis through the so-named theme, the influence of teacher characteristics. Borko et al. describe three types of schemas characterizing teachers' thinking relative to their planning. These are "scripts" (i.e., knowledge structures summarizing information about everyday events), "scenes" (i.e., knowledge of people and relationships, and "propositional structures" (i.e., knowledge of students, classrooms, curriculum, and instructional strategies; Anderson, 1976, 1984; Borko et al., 1990; Shavelson, 1986). Each of these schemas were apparent in participants' verbalizations during the think aloud task, but especially propositional structures. This was captured in the considering the IEP in

context and reflecting on practical knowledge themes, which included sub-themes related to subject-specific considerations, school or board-specific considerations, and student-specific considerations. Moreover, teachers' scenes were highly relevant to the using resources to expand understanding theme, an aspect of teachers' perceptions of their preparation to implement an IEP.

It is not surprising that findings from the present study align well with these earlier frameworks. After all, these frameworks informed the research design and guided the approach to analysis. However, the question remains as to the place of the proposed conceptual model in the planning research. As established in previous chapters, studies related to how teachers plan to support students with disabilities in general education classrooms are scarce (Fuchs et al., 1992; Petersen, 2016; Schumm & Vaughn, 1992; Schumm et al., 1994, 1995). While the conceptual model presented in Figure 4.4 shares much in common with the frameworks before it, its components capture some of teachers' unique responsibilities related to inclusion and individualized instruction for secondary students with autism in general education classrooms. It is the intention of this model to address a gap in both the special education and the planning literature, providing a jumping off point for further study.

Limitations

This study has several limitations that must be considered in its interpretation. First, to be included in the study, participants had to currently be or have ever been a secondary teacher in a general education classroom. While the decision to include those with previous experience was intended to capture a larger, more diverse sample, it resulted in a disproportionate number of participants with special education backgrounds. This was particularly apparent in phase 2, where a majority of participants noted that they had completed their three-part Special Education Specialist AQ, and/or had experience working as SERTs or special education department heads.

While these participants were still able to reflect on a time when they had less special education knowledge, it represents a sampling bias that may have influenced the results.

Related, the sample size for the survey was smaller than originally intended. In recent years, maintaining data integrity in survey research has become more challenging, with the interference of Internet bots considered commonplace—especially in studies with an incentive (Griffin et al., 2022). To avoid this, social media was not used for recruitment. Rather, the opportunity to participate in the study was shared exclusively through the research group's existing networks including in-person events, school boards, and the OSSTF. While the sample demonstrated high credibility in adherence to the inclusion criteria and represented diverse perspectives—particularly in terms of teaching experience and geographic spread—utilizing tools like social media might have given the survey greater reach. Another shortcoming of the sample was the lack of middle school teachers (i.e., Grades 7 and 8) represented. Again, this was particularly apparent in phase 2. While it is difficult to know the true number of middle school teachers that the survey reached, reasons underlying the more limited engagement of this group are unclear at this time. These perspectives might have been particularly useful, however, in understanding the gap between the elementary and secondary panels relative to teachers' engagement with the IEP. Additionally, due to some school boards' concerns about privacy and demands on teachers' time, only limited demographic data (i.e., grade and subject assignment) was collected for think aloud task and interview participants. While these teachers provided anecdotal evidence about the amount of experience they had, both in general and supporting students with autism, this was not analyzed in a formal sense. Given known differences in how early career and experienced teachers plan (Carter et al., 1987; Koni & Krull, 2018; Pilvar & Leijen, 2015), this reflects a shortcoming of the conceptual model.

Additional methodological limitations related primarily to the think aloud task. First, since IEPs are typically housed within a school board's specific software or website, the mock IEP was not necessarily aligned with what participants were accustomed to seeing in practice. While the mock IEP was developed based on the OME's template, there were still variations in the order of how certain components were presented or the specific language that was used. This was evident in some participants' commentary, with some immediately noting that the IEP looked different to what they have seen previously. This may have reminded participants that the simulated planning task was just that—a simulation—rendering it a less realistic depiction of teachers' approaches to planning and potentially influencing their responses.

Another limitation related to the think aloud task was the fact that no participants appeared to actively take notes. This is despite the fact that participants in both phases mostly indicated that they typically take notes when using an IEP in their instructional planning. There are a few possible explanations for this. First, and as mentioned above, using a PDF version of the IEP rather than an interactive website or software may have made the task seem less realistic, reminding participants that they were not planning to support a real student. Next, it is also likely that participants did not want to or were not able to take notes due to the cognitive load associated with completing a concurrent think aloud task (Beach & Willows, 2017). In similar studies of teacher planning, the virtual re-visit think aloud has seemingly addressed these issues (e.g., Beach et al., 2021a, 2022a; Minuk et al., 2022). Specifically, in these studies, participants' screens were recorded as they explored a literacy-oriented professional development website. The recordings were then played back to them as they engaged in the virtual re-visit think aloud, explaining their web-based actions and behaviours. While the present study opted to use a concurrent protocol due to the limitations of what participants could do with a static PDF version

of the IEP, it is possible that the virtual re-visit think aloud would have yielded different findings, such as more detailed note-taking and active planning from participants.

Finally, a limitation of the thematic analysis was some overlap between the themes from the inductive and deductive analyses despite best efforts to apply Patton's (1990, 2002, 2014) external homogeneity criterion. While the conceptual model attempted to group these themes in a way that was meaningful and complementary (e.g., evaluating from the deductive analysis and utility and clarity of IEP content in the inductive analysis), there were other instances where overlap was clear (e.g., connecting to practice from the deductive analysis and considering the IEP in context from the inductive analysis). Taken together, these limitations highlight the need to interpret study findings with caution.

Implications for Future Research

Limitations of and insights from the present study point to a number of areas for future research. First, in terms of the sample and the disproportionate number of participants with special education training and experience, future extensions of this work should consider focusing on early career teachers or excluding participants who have undertaken AQs in special education and/or worked in special education roles. Alternatively, researchers could consider running this study with two groups (i.e., those with additional special education training and experience, and those without) and comparing the findings. Another strategy would be to allow for a longer recruitment period (e.g., over one year) to reach a greater sample that represents all grades and curricular subjects more equally, improving generalizability.

Additionally, to make the think aloud task a more realistic reflection of teachers' engagement with IEPs in their instructional planning, future studies should endeavour to use the actual software or websites that school boards use. While this research could not be conducted

with real IEPs to protect student privacy, researchers and school boards could partner to develop a version of this study that uses the real software or websites but a fictional or deidentified student profile. Ideally, the software or websites used would have the same links to other tools (e.g., attendance databases, OSRs, etc.) so that a more fulsome picture of teachers' engagement with the IEP can be captured. Such research could provide important insights about the usability of the software or websites and, ultimately, lead to improved user experience.

As noted in the limitations above, the concurrent think aloud protocol was chosen over the virtual re-visit due to the fact that the mock IEP did not have any interactive features. Whether or not future studies utilize school board software or websites, findings from the present study make clear that this research would be worth replicating using the virtual re-visit approach. It is possible that reducing participants' cognitive load could lead to other engagement behaviours such as note-taking, generating additional insights into how teachers interact with the IEP. Future research might also consider changing the length of the think aloud task. While participants were able to verbalize their thoughts for 15 minutes, some finished early, and others were cut off by the timer. Removing the time limit altogether could come with some risks (e.g., substantially fewer verbalizations), but could provide important insights into teachers' engagement with the IEP. As for analysis and the potential overlap in study themes, adopting a mixed methods approach whereby data are merged and analyzed together would be worth exploring in future research (Fetters et al., 2013).

Implications for Policy and Practice

Findings from the present study point to several implications for policy and practice. First, despite school boards' best efforts to streamline IEP processes through the use of electronic tools, accessibility issues persist which, in turn, influence teachers' engagement with IEPs in

their instructional planning. In addition to making IEPs available to teachers earlier in the school year, school boards should consider the creation of resources (e.g., instructional videos, formal mentorship, etc.) to support teachers' use of their specific IEP software or website. This was suggested by several survey participants but only stated as a board practice by one of the think aloud task and interview participants. Moreover, while school boards are required to include the same components in students' IEPs (OME, 2022b), at a policy level, they should be required to use consistent language around the components (e.g., psychoeducational assessments, disability identifications, etc.). This could help bring unity to teachers' approaches to using the IEP in their planning, facilitating collaboration, as well as make it easier for teachers to work with IEPs for students who switch boards.

Additionally, while there has been a longstanding emphasis in the literature on early intervention and, in turn, younger students with autism (Fontil et al., 2019; Koegel et al., 2014; Odom et al., 2010), findings from the present study serve as a reminder that limited research attention at the secondary level has implications for policy and practice. During the think aloud task and interview, participants expressed frustration about a lack of guidance for developing, revising, and implementing IEPs for high school students; receiving IEPs with outdated or age-inappropriate information; and limited opportunities to collaborate with colleagues from the elementary panel. In terms of the latter, the importance of collegial collaboration to special education is well-established (Shurr et al., 2022; Shurr et al., 2024), and the lack of formal opportunities for secondary teachers to connect with their elementary counterparts leaves them at a particular disadvantage. Elementary teachers typically have more experience supporting individual students as well as contributing to the development of IEPs. Policy that connects the elementary and secondary panels in this regard is therefore needed to address this gap in practice.

This research also has several implications for both pre- and in-service teacher training. In terms of pre-service training, teacher education programs must recognize the rising number of students with autism in general education classrooms and update course content accordingly (Minuk et al., 2024; People for Education, 2024; Shurr et al., 2025). While this is addressed in part by the current standards for Ontario's teacher education programs, which include courses focused on supporting diverse learners (Ontario Teachers' Federation, 2024), at present, the amount of special education content embedded in Bachelor of Education courses is insufficient, and incompatible with the level of need in today's schools (Mau et al., in press; People for Education, 2024). Until provincial policy is revised to reflect this reality, initial teacher education programs must take it upon themselves to better equip pre-service teachers to engage with IEPs, both for students with various disabilities and those with autism.

As for in-service training, several participants in this study expressed a desire to formally update their special education AQs. In addition to recognizing that the field of special education is continually evolving, several noted that conceptualizations of autism have shifted dramatically over the last decade, rendering some of their knowledge out of date. The OCT should consider the creation of course "refreshers" that allow teachers to update their qualifications at a subsidized cost. Additionally, findings from the present study demonstrated a clear demand for in-service training on several topics related to the IEP, such as better understanding its legal implications. The need for this is particularly pressing as more and more schools move away from specialized program models (e.g., Limestone District School Board, 2025) and embrace UDL as a means of meeting all students' needs in a shared environment.

Finally, this study further established input from students and their families as an essential part of the IEP process, subsequently influencing how teachers use the IEP in their

instructional planning. While involving students with disabilities aged 16 and older in the IEP process is a legal requirement in Ontario (O. Reg. 181/98; OME, 2017), there is scarce guidance on how to do so meaningfully or effectively. The development of policy and resources promoting student engagement in the IEP process can help to enhance teachers' use of the IEP in their instructional planning. Such resources should contain specific guidance for maximizing the involvement of students with autism specifically, setting teachers, students, and their families up for successful collaboration.

Conclusions

Internationally, policy and legislation have provided a strong foundation for the IEP (McBride, 2013; Mitchell et al., 2010; UNCRPD, 2004). Moreover, as the cornerstone of special education (Drasgow et al., 2001), the IEP has enormous potential to facilitate the meaningful inclusion of students with disabilities in the general education classroom. Such inclusion should extend beyond physical access and enable students to make meaningful progress in academic and social domains (Wehmeyer, 2006). However, the effectiveness of an IEP is contingent on how it is implemented in practice.

Research has highlighted the importance of IEP implementation for students with autism specifically (e.g., Ruble & McGrew, 2013; Ruble et al., 2020; Snell-Rood et al., 2020). Yet, outcomes for students with autism suggest that the effectiveness of the IEP is limited (Findley et al., 2022). This is especially concerning for the growing population of adolescents with autism, who struggle with post-school employment, post-secondary education, and independent living outcomes to a greater extent than their peers with other disabilities (Findley et al., 2022).

Considering teachers' role in developing and implementing students' IEPs, research investigating how they engage with IEPs in their instructional planning is critical. This

dissertation has attempted to shed light on how teachers engage with IEPs to support secondary students with autism in the general education classroom. Through the development of a conceptual model that can be used to understand teacher planning in this context, findings provide insight into the lenses through which individual teachers view the IEP, their overall perceptions of the IEP and its content, challenges related to IEP engagement and the resources that can be used to address them, and the myriad of ways in which teachers connect knowledge and practice through their planning.

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Appendices

Appendix A: Recruitment Poster

Appendix B: Survey with Letter of Information and Consent Form

Start of Block: Letter of Information and Consent Form

Q1) **Study Title:** Teachers' Engagement with Individual Education Plans for Secondary Students with Autism

Principal Investigator: Alexandra Minuk, Faculty of Education, Queen's University
Supervisor: Dr. Jordan Shurr
Funder: This research is supported by the Canada Graduate Scholarship – Doctoral from the Social Sciences and Humanities Research Council.

You are invited to participate in a research study because you are a secondary teacher with experience teaching at least one student with autism spectrum disorder (henceforth referred to as autism) in an Ontario public school. This letter provides information to help you make an informed choice. Please read this document carefully and ask any questions you may have. Participation is voluntary and you can decline to participate in the research or any aspect of the research at any time without penalty. You can discuss your participation with friends, family, Elders, or other providers before choosing to participate. All your questions should be answered before you decide whether to participate in this research study. This study has received ethical approval by the Queen's University General Research Ethics Board (GREB).

Background and study purpose: In Ontario, little is known about general education teachers' perceptions of the Individual Education Plan (IEP) and how they use it in their instructional planning. While the prevalence of autism is on the rise in Ontario, to date, research and practice have primarily focused on elementary students. Therefore, the purpose of this study is to examine general education teachers' perceptions of the IEP and how they plan to implement one for secondary students with autism.

What are the study procedures? Participation in this study will consist of answering an online survey using Qualtrics™ that will take approximately 20-30 minutes to complete. You will be asked to answer questions using the online survey platform. The questions will ask about your current practices related to the IEP and perceptions around its usefulness. It will also ask you about your view of your preparedness to handle various responsibilities related to the IEP for students with autism. These are general questions, and no preparation is needed beforehand. You can choose to skip any questions you do not wish to answer. At the end of the survey, you can choose to indicate if you are interested in participating in a follow-up qualitative study. If you are interested, you will be redirected to a separate link to provide your name, email address, and the grade(s) and subject(s) you teach. Should you choose to provide this information, your name and email address will not be linked to your survey responses. For survey respondents who wish to enter the draw only, names and email addresses will be deleted immediately after the draw is complete and winners have been selected. For survey respondents who indicate interest in participating in the follow up study, names and email addresses will be deleted immediately after the two-week withdrawal period for the follow-up study (i.e., when

participants can have their data withdrawn from the study).

What are the risks of participating in this study? The risks associated with participating in this study are short-term, and are considered no greater than those associated with typical internet use. The known risks are listed below. However, there may be other unexpected risks that are not known.

- Privacy risk: Survey respondents who are interested in participating in the follow-up qualitative study and/or entering a draw to win one of two gift cards will be asked to provide their name and email address. To mitigate this risk, participants will be re-directed to a different survey link in Qualtrics such that their survey data is not linked to their personal data (name and email address). Additionally, privacy risks will be mitigated by storing data on Queen's University OneDrive server, a secure platform.
- Questions about sensitive or personal issues: Survey respondents will be asked to self-report their engagement with the Individual Education Plan. This could potentially make some participants uncomfortable. To mitigate this risk, participants are informed that they can skip any questions that make them uncomfortable.

What are the benefits of participating in this study? There are no direct benefits for participating in this study. We hope that the results of this study may benefit teachers as well as students with autism in the future by generating insights related to the IEP that can inform teacher training.

Withdrawal from this study: You can choose to stop the survey at any time without providing a reason by closing your browser. Once you have consented to participate, you will be unable to edit survey responses or withdraw your data, and any responses up to the point of your exit may be used in the analysis.

Confidentiality: All the information collected during the research study will remain strictly confidential to the extent permitted by the applicable laws. If you decide to participate in this study, the research team will only collect the information needed. The following demographic information will be collected for this study: current/past caseload of students with autism; years of teaching experience (in general and for students with autism); current teaching context (i.e., grades and subjects taught; whether school board is in an urban, suburban, or rural region; relevant additional qualifications completed; and additional certifications or degrees.

The study data will be stored on a secure Queen's University OneDrive server and will only be accessible to the research team. Upon study completion, all de-identified data used to develop the study results for publication will continue to be kept in a secure and encrypted location accessible only to research team for five years per Queen's data retention policy. All other data will be deleted or destroyed. Once the data is no longer required for publication or research purposes, it will be deleted by the Principal Investigator. The data custodian(s) of the study data for the duration of this study are Alexandra Minuk and Dr. Jordan Shurr.

Authorized Representatives of Queen's University, its affiliated hospitals and/or Queen's University

General Research Ethics Board (GREB) may request access to study data and/or all other study material used in this research. GREB is bound by confidentiality agreements and will not release any personal information. Additionally, the results of this research may be published or shared during scientific meetings however you will not be identified during the dissemination of study results or publication. All efforts will be made to protect your privacy and the likelihood that someone may identify you is small, however it cannot be eliminated.

Incentives: After submitting your survey responses, you will be directed to a separate survey and can enter your contact information to be entered into a draw for a chance to win one of two $50 Indigo gift cards. Your odds of winning are based on the number of individuals who participate in the survey. Your name and email will be stored securely and separately from your survey responses and permanently erased once the draw is complete. The survey will close once the target number of responses has been reached. Entry into the draw will close once all survey responses have been received. The draw will take place within two weeks of the survey closing and be conducted by a random number generator. Only one prize will be awarded per participant. Winners will be contacted using the information provided upon entry into the draw and the gift card will be sent electronically. The prize must be accepted as awarded or forfeited and cannot be redeemed for cash. Participation is not required for entry into the draw. To enter without participating in the study, you can skip to the end of the survey without answering any questions and click the link to enter your information. Entries must be received before the survey is closed to be eligible.

If you have questions about the study, you can contact Dr. Jordan Shurr by email at j.shurr@queensu.ca or by phone at (613) 533 6000 ext. 77363. For ethics concerns, please contact the General Research Ethics Board (GREB) at 1-844-535- 2988 (Toll free in North America) or email chair.GREB@queensu.ca.

We anticipate that your participation in this survey presents no greater risk than your everyday use of the Internet. You have not waived any legal rights by consenting to participate in this study. Please retain a copy of this letter for your records. Survey completion will represent consent. By consenting, you are indicating that you have read this letter and have had all of your questions answered.

End of Block: Letter of Information and Consent Form

Start of Block: Demographic Information

Q2) Are you currently an Ontario-certified teacher of at least one secondary student with autism in a general education classroom within an Ontario public school?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Are you currently an Ontario-certified teacher of at least one secondary student with autism in a... = Yes

Q3) What is your current caseload of secondary students with autism?

_____

Display This Question:

If Are you currently an Ontario-certified teacher of at least one secondary student with autism in a... = No

Q4) Have you ever been an Ontario-certified teacher of at least one secondary student with autism in a general education classroom within an Ontario public school?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Have you ever been an Ontario-certified teacher of at least one secondary student with autism in... = No

Q5) Approximately how many secondary students with autism have you taught in your career?

_____

Q6) How many years of teaching experience do you have?

- ○ 0-5 (1)
- ○ 6-10 (2)
- ○ 11-15 (3)
- ○ 16-20 (4)
- ○ 20+ (5)

Q7) How many years of experience do you have teaching students with autism?

- ○ 0-5 (1)
- ○ 6-10 (2)
- ○ 11-15 (3)
- ○ 16-20 (4)
- ○ 20+ (5)

Display This Question:

If Are you currently an Ontario-certified teacher of at least one secondary student with autism in a... = Yes

Q8) What grade(s) do you currently teach? Select all that apply.

- ☐ Grade 7 (1)
- ☐ Grade 8 (2)
- ☐ Grade 9 (3)
- ☐ Grade 10 (4)
- ☐ Grade 11 (5)
- ☐ Grade 12 (6)

Display This Question:

If Have you ever been an Ontario-certified teacher of at least one secondary student with autism in... = Yes

Q9) What grade(s) did you teach? Select all that apply.

- ☐ Grade 7 (1)
- ☐ Grade 8 (2)

- [ ] Grade 9 (3)
- [ ] Grade 10 (4)
- [ ] Grade 11 (5)
- [ ] Grade 12 (6)

Display This Question:

If Are you currently an Ontario-certified teacher of at least one secondary student with autism in a... = Yes

Q10) What subject(s) do you currently teach? Select all that apply.

- [ ] The Arts (1)
- [ ] Business Studies (2)
- [ ] Canadian and World Studies (3)
- [ ] Classical Studies and International Languages (4)
- [ ] Computer Studies (5)
- [ ] Cooperative Education (6)
- [ ] English (7)
- [ ] English as a Second Language and English Literacy Development (8)
- [ ] First Nations, Metis, and Inuit Studies (9)
- [ ] French as a Second Language (10)

- ☐ Guidance and Career Education (11)
- ☐ Health and Physical Education (12)
- ☐ Indigenous Languages (13)
- ☐ Mathematics (14)
- ☐ Science (15)
- ☐ Social Sciences and Humanities (16)
- ☐ Technological Education (17)
- ☐ Other: (18) _____

Display This Question:

If Have you ever been an Ontario-certified teacher of at least one secondary student with autism in... = Yes

Q11) What subject(s) did you teach? Select all that apply.

- ☐ The Arts (1)
- ☐ Business Studies (2)
- ☐ Canadian and World Studies (3)
- ☐ Classical Studies and International Languages (4)
- ☐ Computer Studies (5)
- ☐ Cooperative Education (6)
- ☐ English (7)

- [ ] English as a Second Language and English Literacy Development (8)
- [ ] First Nations, Metis, and Inuit Studies (9)
- [ ] French as a Second Language (10)
- [ ] Guidance and Career Education (11)
- [ ] Health and Physical Education (12)
- [ ] Indigenous Languages (13)
- [ ] Mathematics (14)
- [ ] Science (15)
- [ ] Social Sciences and Humanities (16)
- [ ] Technological Education (17)
- [ ] Other: (18) _____

Display This Question:

If Are you currently an Ontario-certified teacher of at least one secondary student with autism in a... = Yes

Q12) Please choose the option that best describes the location of the school in which you work (if you are unsure, you can search the location from here):

- ○ Rural (less than 1,000 residents) (1)
- ○ Small Population Centre (1,000-29,999 residents) (2)
- ○ Medium Population Centre (30,000-99,999 residents) (3)

○ Large Urban Population Centre (100,000 or greater) (4)

Display This Question:

If Have you ever been an Ontario-certified teacher of at least one secondary student with autism in... = Yes

Q14) Please select the Additional Qualifications (three part) that you have completed:

	Part 1 (1)	Part 2 (2)	Specialist (3)
Special Education (1)	☐	☐	☐
Equitable and Inclusive Schools (formerly Inclusive Classrooms) (2)	☐	☐	☐

Q15) Please select the Additional Qualifications that you have completed:

☐ Teaching Students with Communication Needs (ASD) (1)

☐ Teaching Students with Behavioural Needs (2)

☐ Teaching Students with Intellectual Needs (Developmental Disability) (3)

☐ Use and Knowledge of Assistive Technology (4)

Q16) Please list any other Additional Qualifications you have completed that are relevant to teaching students with autism:

_____

Q17) Please select any additional certifications or degrees you have:

- ☐ Master of Education (4)
- ☐ Post-graduate Certificate in Special Education (5)
- ☐ Other: (6) _____

End of Block: Demographic Information

Start of Block: General

The following questions will ask you about how you **access** students' IEPs and general IEP **format** (e.g., hard or electronic copy).

Q18) When do you typically receive a student's IEP?

- ○ A few months before a new school year (1)
- ○ A few weeks before a new school year (2)
- ○ A few days before a new school year (3)
- ○ A few days into a new school year (4)
- ○ A few weeks into a new school year (5)
- ○ A few months into a new school year (6)
- ○ Other: (7) _____

Q19) How do you typically receive a student's IEP?

- ○ I receive an electronic copy that I can access using software (1)
- ○ I receive an electronic copy that I can access using a website (2)
- ○ I receive an electronic copy by email (3)
- ○ Someone at my school (e.g., special education resource teacher) delivers a hard copy to me (4)
- ○ Someone at my school (e.g., special education resource teacher) has a hard copy, which I have to collect from them (5)
- ○ Other: (6) _____

Q20) On a scale from 1 (very easy) to 5 (very difficult), please rate how easy you find it to access a student's IEP in your school.

- ○ 1 (very easy) (1)
- ○ 2 (somewhat easy) (2)
- ○ 3 (neither easy nor difficult) (3)
- ○ 4 (somewhat difficult) (4)
- ○ 5 (very difficult) (5)

Q21) How long after receiving a student's IEP do you typically access it?

- ○ Within days (1)
- ○ Within a week or two (2)
- ○ After a month or more (3)
- ○ When I feel I need it (e.g., in preparation for a meeting, when I have a question about the student, etc.) (4)
- ○ I do not access it (5)

Display This Question:

If How long after receiving a student's IEP do you typically access it? != I do not access it

Q22) Once you access the IEP, what do you typically do?

- ○ I read it in full (1)
- ○ I skim it for important information (2)
- ○ I review specific sections (7)
- ○ Other: (5) _____

Q23) Which sections do you review?

_____

Display This Question:

If How long after receiving a student's IEP do you typically access it? != I do not access it

Q24) How often do you typically refer back to a student's IEP throughout the school year?

- Once a week or more (1)
- Once a month or more (2)
- Less than once a month but at least once a semester (3)
- Less than once a semester but at least once more in a school year (4)
- Not until I'm preparing for a relevant meeting (5)

Display This Question:

If How long after receiving a student's IEP do you typically access it? != I do not access it

Q25) How often do you take notes on a student's IEP?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

Display This Question:

If How long after receiving a student's IEP do you typically access it? != I do not access it

And How often do you take notes on a student's IEP? != Never

Q26) How do you typically take notes on a student's IEP?

- ○ I type my notes in a separate document (1)
- ○ I take notes by hand on a separate piece of paper (2)
- ○ I take notes by hand on a printed copy of the IEP (3)
- ○ Other: (4) _____

Display This Question:

If How long after receiving a student's IEP do you typically access it? != I do not access it

And How often do you take notes on a student's IEP? != Never

Q27) How frequently do you refer back to your notes on a student's IEP?

- ○ Once a week or more (1)
- ○ Once a month or more (2)
- ○ Less than once a month but at least once a semester (3)
- ○ Less than once a semester but at least once more in the school year (4)
- ○ Not until I'm preparing for a relevant meeting (5)

Q28) What barriers do you think teachers face in **accessing** the IEP and its information?

_____

Q29) What suggestions do you have for improving the **format** of the IEP?

_____

End of Block: General

Start of Block: Product (Content)

The following six questions will ask you about your views on the **content** of the IEP. Please feel free to view the Ontario Ministry of Education's general IEP template for definitions of the components as you answer the questions.

Q30) On a scale from 1 (not at all useful) to 5 (extremely useful), rate the usefulness of the following IEP components to your course planning for students with autism. If you are not familiar with any of the components, please select N/A.

	Not at all useful (1)	A little useful (2)	Somewhat useful (3)	Very useful (4)	Extremely useful (5)	N/A
Assessment Data (1)	○	○	○	○	○	○
The Student's Strengths and Needs (2)	○	○	○	○	○	○
Subjects, Courses, or Alternative Programs to Which the IEP Applies (3)	○	○	○	○	○	○
Accommodations (4)	○	○	○	○	○	○
Provincial Assessments (5)	○	○	○	○	○	○

Q31) On a scale from 1 (not at all useful) to 5 (extremely useful), rate the usefulness of the following components of the **IEP special education program** to your course planning for students with autism. If you are not familiar with any of the components, please select N/A.

	Not at all useful (1)	A little useful (2)	Somewhat useful (3)	Very useful (4)	Extremely useful (5)	N/A
Baseline Level of Achievement (1)	○	○	○	○	○	○
Annual Program Goal(s) (2)	○	○	○	○	○	○
Learning Expectations (3)	○	○	○	○	○	○
Teaching Strategies (4)	○	○	○	○	○	○
Assessment Methods (5)	○	○	○	○	○	○

Q32) On a scale from 1 (not at all useful) to 5 (extremely useful), rate the usefulness of the following components of the **IEP transition plan** to your course planning for students with autism. If you are not familiar with any of the components, please select N/A.

	Not at all useful (1)	A little useful (2)	Somewhat useful (3)	Very useful (4)	Extremely useful (5)	N/A
Goal(s) (1)	○	○	○	○	○	○
Actions Required (2)	○	○	○	○	○	○
Persons Responsible for Actions (3)	○	○	○	○	○	○
Timelines (4)	○	○	○	○	○	○

Q33) On a scale from 1 (not at all useful) to 5 (extremely useful), rate the usefulness of the following IEP components to your course planning for students with autism. If you are not familiar with any of the components, please select N/A.

	Not at all useful (1)	A little useful (2)	Somewhat useful (3)	Very useful (4)	Extremely useful (5)	N/A
Human Resources (1)	○	○	○	○	○	○
IEP Development Team (i.e., staff members and roles) (2)	○	○	○	○	○	○
Sources Consulted in the Development of the IEP (3)	○	○	○	○	○	○
Log of Parent/Student Consultation and Staff Review/Updating (4)	○	○	○	○	○	○

Q34) Are there any other components of the IEP that were not mentioned that you would like to comment on?

_____

Q35) What suggestions do you have for improving the **content** of the IEP? (e.g., elaboration on or removal of particular components)

_____

End of Block: Product (Content)

Start of Block: Process (Actions)

The following three questions will ask you about your views on various actions and responsibilities associated with the IEP.

Q36) On a scale from 1 (not at all confident) to 5 (extremely confident), use the slider to rate your ability to carry out the following IEP-related actions for students with autism.

	Not at all confident (1)	A little confident (2)	Somewhat confident (3)	Very confident (4)	Extremely confident (5)
Individualizing instruction (1)	○	○	○	○	○
Pacing instruction (2)	○	○	○	○	○
Providing accommodations (3)	○	○	○	○	○
Adapting general education content (4)	○	○	○	○	○
Differentiating assessment so students can respond to questions using alternate communication modes (5)	○	○	○	○	○
Planning for the implementation of IEP goals and objectives (6)	○	○	○	○	○

Using data collection procedures to monitor individual student progress (7)	○	○	○	○	○
Individualizing evaluation criteria (8)	○	○	○	○	○

Q37) On a scale from 1 (not at all confident) to 5 (extremely confident), use the slider to rate your ability to carry out the following IEP-related actions for students with autism:

	Not at all confident (1)	A little confident (2)	Somewhat confident (3)	Very confident (4)	Extremely confident (5)
Participating as a member of an IEP team (1)	○	○	○	○	○
Sharing responsibility for decision-making (2)	○	○	○	○	○
Working with other professionals to plan for implementing IEP goals and objectives (3)	○	○	○	○	○
Sharing resources with team members (4)	○	○	○	○	○
Disseminating and gathering information related to student abilities and needs (5)	○	○	○	○	○

Collaborating with colleagues to use data to evaluate progress and inform future instruction (6)	○	○	○	○	○
Collaborating with learners and their families to establish ongoing communication (7)	○	○	○	○	○

Q38) Are there any other **actions** or **responsibilities** associated with the IEP that you wish to comment on?

_____

End of Block: Process (Actions)

End of Survey Text

Thank you for participating in the survey. We want to offer you the opportunity to be included in a draw for one of two $50 Indigo gift cards by adding your contact information when you are directed to a second survey. Your survey data will not be linked to any of the contact information you provided for the draw.

Appendix C: Follow-up Survey

Start of Block: Gift Card Draw

Gift Card Draw

Your name and contact information will remain confidential and will not be linked to your survey answers.

The contact information collected for the draw will be securely stored, separately from your survey responses. It will be permanently erased once the draw is completed, and the prize(s) have been awarded.

Odds of winning are based on the number of people participating in the survey. Entry into the draw will close once all survey responses have been received. If you wish to be included in this draw, provide the following:

First name:

_____

Last name:

_____

Email address:

_____

End of Block: Gift Card Draw

Start of Block: Follow Up Research

Follow up Task and Interview

Are you interested in participating in a related task and follow-up interview over Zoom? If so, please

provide the information below.

Your responses from the previous survey will not be linked to the information you provide in this survey, and your name and email address will only be used to contact you if you win the draw. Email communications will be through the Principal Investigator's secure Queen's University email, and all data will be stored on Queen's University's secure server once it has been de-identified.

First name:

_____

Last name:

_____

Email address:

_____

What grade(s) do you currently teach? Select all that apply.

- [ ] Grade 7 (1)
- [ ] Grade 8 (2)
- [ ] Grade 9 (3)
- [ ] Grade 10 (4)
- [ ] Grade 11 (5)
- [ ] Grade 12 (6)

What subject(s) do you currently teach? Select all that apply.

- [ ] The Arts (1)
- [ ] Business Studies (2)
- [ ] Canadian and World Studies (3)
- [ ] Classical Studies and International Languages (4)
- [ ] Computer Studies (5)
- [ ] Cooperative Education (6)
- [ ] English (7)
- [ ] English as a Second Language and English Literacy Development (8)
- [ ] First Nations, Metis, and Inuit Studies (9)
- [ ] French as a Second Language (10)
- [ ] Guidance and Career Education (11)
- [ ] Health and Physical Education (12)
- [ ] Indigenous Languages (13)
- [ ] Mathematics (14)
- [ ] Science (15)
- [ ] Social Sciences and Humanities (16)

- [ ] Technological Education (17)
- [ ] Other: (18) _____

End of Block: Follow Up Research

Appendix D: Mock IEP

Individual Education Plan	**IEP**

REASON FOR DEVELOPING THE IEP

☒ Student identified as exceptional by IPRC	☐ Student not identified by IPRC but requires special education program/services, including accommodations and/or modified/alternative learning expectations

STUDENT PROFILE

Name: John Doe		Date of Birth: January 1, 2010
Student OEN: 123456789		
School: Secondary School		Semester: 1
Principal: Mrs. Smith	Current Grade: 9	School Year: 2024/25
Most Recent IPRC Date: 01/05/2023	Date Annual Review Waived by Parent/Guardian: N/A	
Exceptionality: Autism		
IPRC Placement Decision: A regular class with indirect support		

ASSESSMENT DATA

Information Source	Date	Summary of Results
Psychoeducational Assessment	01/05/2016	Report provides a diagnosis of autism spectrum disorder
Behaviour Assessment	05/04/2016	John is able to focus during structured, individual tasks but becomes overwhelmed in unstructured social settings. Transitions between activities also present challenges.
Speech and Language Assessment	10/10/2020	John has age-appropriate receptive and expressive language skills, but demonstrates challenges with pragmatic language (e.g., understanding sarcasm, idioms, or subtle cues in conversations). Social language difficulties

		can impact peer interactions and classroom communication.
Reading Assessment	01/28/2021	John has age-appropriate decoding skills but shows challenges in reading comprehension, particularly when it comes to inferential and abstract questions. John's fluency is impacted by difficulties with prosody (rhythm and intonation of speech) when reading aloud. While John can read aloud with accuracy, they require additional time to process information and make connections within the text.
Occupational Therapy Assessment	12/09/2022	Some delays in personal care and fine motor skills.

Relevant Medical Conditions	☐ Yes *(list below)*	☒ No

Health Support Services/Personnel Support Required	☐ Yes *(indicate type below)*	☒ No

STUDENT'S STRENGTHS AND NEEDS	
Areas of Strength	**Areas of Need**
Attention to detail	Social communication
Attention to topics and activities of interest	Pragmatic language
Gross motor skills	Organization and time management
Visual learner	Sensory sensitivities
Independence with structured tasks	Fine motor skills

SUBJECTS, COURSES/CODES OR ALTERNATIVE SKILL AREAS TO WHICH THE IEP APPLIES			
1. ENL1W: English	☒ AC	☐ MOD	☐ALT
2. FSF1O: Core French	☒ AC	☐ MOD	☐ALT
3. MTH1W: Math	☒ AC	☐ MOD	☐ALT
4. CGC1W: Geography	☒ AC	☐ MOD	☐ALT

Elementary Program Exemptions or Secondary School Compulsory Course Substitutions

Yes *(provide educational rationale)* ☒ No

Complete for secondary students only:

Student is currently working toward the attainment of the:

☒ Ontario Secondary School Diploma ☐ Ontario Secondary School Certificate ☐ Certificate of Accomplishment

Reporting Format

☒ Provincial Report Card

☐ Alternative Report

Reporting Dates: 12/20/24

ACCOMMODATIONS

Accommodations are assumed to be the same for all program areas unless otherwise indicated.

Instructional Accommodations	Environmental Accommodations	Assessment Accommodations
Highly structured approach	Alternative workspaces	More frequent breaks

Pictorial schedule for transitions	Minimizing background noise	Extended time limits
Graphic organizers	Quiet setting	Reduction in the number of tasks used to assess a concept or skill
Word retrieval prompts	Strategic seating	
Mind maps		
Visual cueing		
Individualized Equipment:	☒ Yes *(list below)*	☐ No
Chromebook	Noise-cancelling headphones	

PROVINCIAL ASSESSMENT		
Provincial Assessment Year: *Name of Assessment*: Grade 9 – Mathematics	☐ No	☒ Yes *(provide name of assessment below)*
Permitted Accommodations More frequent breaks, extended time limits, reduction in the number of tasks used to assess a concept or skill	☐ No	☒ Yes *(list below)*
Exemption with Rationale	☒ No	☐ Yes *(provide explanatory statement from relevant EQAO document)*
Deferral of Ontario Secondary School Literacy Test (OSSLT) Rationale:	☒ No	☐ Yes *(provide rationale below)*
Ontario Secondary School Literacy Course (OSSLC)	☒ No	☐ Yes

TRANSITION PLAN

Actions Required at this Time ☐ No ☒ Yes

Goal(s): John will work toward earning an Ontario Secondary School Diploma to pursue post-secondary opportunities in the trades.

Actions Required	Person(s) Responsible for Actions	Timelines
Complete core and essential courses and determine if the Applied stream is suitable for senior grades.	Student, parent, guidance counsellor, SERT	Grades 9 and 10
Remediation in Language preparation for the Grade 10 EQAO Literacy Test/Course	SERT, English Teacher	Grades 9 and 10 – ongoing
Investigate a variety of technological education courses of interest to determine interests and aptitudes in workplace settings	Student, parent, guidance counsellor	Grades 9 and 10 - ongoing
Explore potential pathways for reaching post-secondary goals (e.g., apprenticeship)	Student, parent, guidance counsellor	Grades 9 and 10 – ongoing
Attend school and board-sponsored (OYAP) work experience fairs and presentations	Student, parent, guidance counsellor	Annually
Initiate contact with community employment agency to assist in finding part-time employment for the summer	Student, parent, guidance counsellor	Grades 9 and 10 – ongoing
Participate in job shadowing opportunities to determine interests and potential courses to take in the future	Student, parent, guidance counsellor	Grades 9 and 10 - ongoing
Participate in annual transition meeting to determine annual goals	Student, parent, SERT	Annually

HUMAN RESOURCES (teaching/non-teaching)			
Type of Service	**Initiation Date**	**Frequency or Intensity**	**Location**
Special Education Resource Teacher (SERT)	09/03/2024	Once a week semester one (30 minutes)	Resource room
Guidance Counsellor	09/03/2024	Once a semester (60 minutes)	Guidance office
Special Education Resource Teacher (SERT)	01/06/2025	Once a week semester two (30 minutes)	Resource room

IEP DEVELOPMENT TEAM	
Staff Member	**Position**
Mrs. Smith	Principal
Mrs. Johnson	Special Education Resource Teacher (SERT)
Mr. English	English Teacher
Mr. French	French Teacher
Ms. Math	Math Teacher
Mrs. Geography	Geography Teacher
Mr. Guidance	Guidance Counsellor

SOURCES CONSULTED IN THE DEVELOPMENT OF THE IEP

☒ IPRC Statement of Decision (if applicable)	☒ Provincial Report Card	☒ Previous IEP	☒ Parents/Guardians	☒ Student
☒ Other Sources *(list below)*				
Ontario Student Record Classroom observation Current work School staff with previous experience working with the student				

DATE OF PLACEMENT IN SPECIAL EDUCATION PROGRAM *(select the appropriate option)*	
☒ 1) First day of attendance in new special education program	
☐ 2) First day of the new school year or semester in which student is continuing in a placement	
☐ 3) First day of the student's enrolment in a special education program that he/she begins in mid-year or mid-semester as a result of a change of placement	
Date of Placement:	Completion Date of IEP Development Phase (within 30 school days following the Date of Placement)
09/03/2024	10/03/2024

LOG OF PARENT/STUDENT CONSULTATION		
Date	**Description of Consultation**	**Feedback/Outcome**
05/20/2024	IEP update to select option sheets for 2024-2025	Parent/student returned options sheet selections.

09/08/2024	Transition Meeting—student, parents, SERT	Determined goals for 2024-2025 school year, transition to new school. Student requested emphasis on trades in the transition plan and actions, which were reflected in the IEP.
09/22/2024	Draft IEP sent to parents for consultation	IEP returned with parent feedback on accommodations (i.e., requested a highly structured approach, visual supports, and additional supports with transitions between classes), which were added to the IEP.
10/01/2024	Finalization of semester one goals and expectations with teachers	Consultation complete with parent, student, classroom teachers—working copy signed off.

The principal is responsible for each student's IEP and must ensure that it is implemented according to the ministry's guidelines and that a monitoring plan is in place.

This IEP has been developed according to the ministry's standards and appropriately addresses the student's strengths and needs.

Principal's Signature _____ Date _____

Involvement of Parent/Guardian and Student (if Student is 16 or older)

I was consulted in the development of this IEP ☒ Parent/Guardian ☒ Student

I declined the opportunity to be consulted in the development of this IEP ☐ Parent/Guardian ☐ Student

I have received a copy of this IEP ☒ Parent/Guardian ☒ Student

Parent/Guardian Comments:

_____
_____
_____

_____	_____
Parent/Guardian Signature	Date
_____	_____
Student Signature (if 16 or older)	Date

Appendix E: Semi-Structured Interview Guide

Script: Thank you for completing the think aloud task. As discussed, we will now be doing an interview, which will take no longer than 30-45 minutes. Basically, I am going to ask you some questions about your experiences and perspectives on planning to implement an IEP for students with autism. The idea is that the interview will allow you to elaborate on some of your thoughts during the think aloud task. With your permission, I'd like to video record our interview so I can better focus on our conversation. You can feel free to keep your camera on or turn it off during the interview [pause for response; if participants do not consent to recording, the interview will not be recorded].

This interview will be kept confidential and your identity will not be included in the write-up of any results from the study. When the study is completed, any personal identifiers will be deleted/shredded. Do you have any questions for me before we begin? *[Pause for questions].*

Warm up Questions:

1. First and foremost, what did you think of the think aloud task?
2. Can you tell me what drew you to participate in this research? *[Prompt if needed: research about IEPs or teaching students with autism in inclusive classrooms].*

Main Questions:

Process

1. How do you typically receive a student's IEP? *[Prompt if needed: when during the school year, who provides it, digital or hard copy]*
2. What are your activities related to the IEP? *[Prompt if needed: participating in meetings, data collection, communication with families, etc.]*
3. Can you walk me through what you typically do when you first receive a student's IEP? *[Prompt if needed: when/where do you read the IEP? Do you read them all at once?]*
4. Can you describe how you typically use the IEP(s) for the student(s) with autism in your class in your planning? *[Prompt if needed: lesson planning, unit planning, etc.]*

Format

5. Do you feel the information in the IEP is presented effectively? If no, what format do you feel might be more effective?
6. Would you say you read the IEP in order of how it's presented? Why or why not?

Content

7. Which IEP components do you spend the most time on, if any, and why? Feel free to pull up the IEP from the think aloud task for a list of the components.
8. Which IEP components do you spend the least time on, if any, and why? Feel free to pull up the IEP from the think aloud task for a list of the components.

9. Are there any IEP components that you feel less comfortable with or would like to know about? If so, which ones and why? Feel free to pull up the IEP from the think aloud task for a list of the components.

Preparation

10. Can you tell me if and how your teacher education program prepared you to use an IEP (both in general and for students with autism specifically)?
11. Can you tell me if and how any in-service training you have undertaken has prepared you to use an IEP (both in general and for students with autism specifically)?
12. Can you tell me any other ways that you find information and resources related to the IEP (both in general and for students with autism specifically? *[Prompt if needed: professional learning communities, the Internet, etc.]*

Other Questions

13. When you have questions related to the IEP or teaching students with autism, what do you do? *[Prompt if needed: who do you go to, or what resources do you access?]*
14. If you were revising an IEP for a student with autism, what resources would you use to help you? For example, how would you come up with or find appropriate teaching strategies for each learning expectation?
15. Is there anything else you think I should know about this topic?

Closing

Thank you very much for taking the time today to participate in this study. Do you have any questions for me? *[Pause to answer questions, if not, stop recording and end call].*

Appendix F: Think Aloud Task and Semi-Structured Interview Letter of Information and Consent Form

Study Title: Teachers' Engagement with Individual Education Plans for Secondary Students with Autism

Principal Investigator: Alexandra Minuk, Faculty of Education, Queen's University

Supervisor: Dr. Jordan Shurr

Funder: This research is supported by the Canada Graduate Scholarship – Doctoral from the Social Sciences and Humanities Research Council.

You are invited to participate in a research study because you are a secondary teacher with experience teaching at least one student with autism spectrum disorder (henceforth referred to as autism) in an Ontario public school. This letter provides information to help you make an informed choice. Please read this document carefully and ask any questions you may have. Participation is voluntary and you can decline to participate in the research or any aspect of the research at any time without penalty. You can discuss your participation with friends, family, Elders, or other providers before choosing to participate. All your questions should be answered before you decide whether to participate in this research study. This study has received ethical approval by the Queen's University General Research Ethics Board (GREB).

Background and study purpose: In Ontario, little is known about general education teachers' perceptions of the Individual Education Plan (IEP) and how they use it in their instructional planning. While the prevalence of autism is on the rise in Ontario, to date, research and practice have primarily focused on elementary students. Therefore, the purpose of this study is to examine general education teachers' perceptions of the IEP and how they plan to implement one for secondary students with autism.

What are the study procedures? Participation in this study will consist of a think aloud task (approximately 15 minutes) and semi-structured interview (approximately 30-45 minutes). Once consent is received, a 60-minute Zoom meeting will be scheduled at an agreeable time. The Principal Investigator will provide an overview of the session at the beginning of the Zoom meeting. Next, the Principal Investigator will provide instructions and a mock IEP for completing the think aloud task during the session. There is no need to prepare anything beforehand, and time will be provided during the session to discuss the IEP and ask questions. Following the think aloud task, participants will engage in a semi-structured interview focused on how they engage in planning to implement an IEP for students with autism. Both the think aloud task and interview will be audio recorded using Zoom, and later manually transcribed and analyzed by the Principal Investigator.

What are the risks of participating in this study? The risks associated with participating in this study are short-term. The known risks are listed below. However, there may be other unexpected risks that are not known.

- Privacy risk: Participants are asked to provide their name and email address to participate, as well as meet with the Principal Investigator online. Privacy risks will be mitigated by de-identifying data and using secure Queen's University platforms for all communications and data storage.
- Questions about sensitive or personal issues: Survey respondents will be asked to self-report their engagement with the Individual Education Plan. This could potentially make some participants uncomfortable. To mitigate this risk, participants are informed that they do not have to answer any questions that make them uncomfortable.

What are the benefits of participating in this study? There are no direct benefits for participating in this study. We hope that the results of this study may benefit teachers, as well as students with autism, in the future by generating insights related to the IEP.

Withdrawal from this study: You can choose to stop at any time without providing a reason notifying the Principal Investigator before or during the Zoom session. After consenting to participate, you can withdraw your data by emailing the Principal Investigator up to two weeks after data collection is complete. After this two-week withdrawal period, participants will be unable to withdraw data due to the completion of analysis. Any data that participants withdraw from the study within the two-week withdrawal period will be destroyed and thus excluded from analysis.

Confidentiality: All the information collected during the research study will remain strictly confidential to the extent permitted by the applicable laws. If you decide to participate in this study, the research team will only collect the information needed. The following personal and demographic information will be collected for this study: name, email address, grade(s), and subject(s) taught. Name and email address are only used for the purpose of contacting participants, and will be replaced by unique numeric identifiers. This log will be stored separately to the other study data and will only be accessed by the Principal Investigator. The only copy of the log will be destroyed immediately after the two-week withdrawal period. Once de-identified, the study data will be stored on a secure Queen's University OneDrive server and will only be accessible to the research team.

Your participation in this study will involve audio/video recording using Zoom, a secure Queen's University platform, for the purpose of transcription and data analysis. Once the recordings have been transcribed by the Principal Investigator, the audio/video files will be deleted immediately. Consenting to participate in the study indicates consent to audio/video recording.

Quotes from the think aloud task and interviews may be used when presenting study results. These quotes will never include any real names, and researchers will do their best to ensure the quotes do not identify participants. During the think aloud task and interview, please let the Principal Investigator know if you say anything you don't want quoted.

Upon study completion, all de-identified data used to develop the study results for publication will continue to be kept in a secure and encrypted location accessible only to research team for five years per Queen's data retention policy. All other data will be deleted or destroyed. Once the data is no longer required for publication or research purposes, it will be deleted by the Principal Investigator. The data custodian(s) of the study data for the duration of this study are Alexandra Minuk and Dr. Jordan Shurr.

Authorized Representatives of Queen's University, its affiliated hospitals and/or Queen's University General Research Ethics Board (GREB) may request access to study data and/or all other study material used in this research. GREB is bound by confidentiality agreements and will not release any personal information. Additionally, the results of this research may be published or shared during scientific meetings however you will not be identified during the dissemination of study results or publication. All efforts will be made to protect your privacy and the likelihood that someone may identify you is small, however it cannot be eliminated.

Incentives: There is no incentive or compensation for participating in this study.

If you have questions about the study, you can contact Dr. Jordan Shurr by email at j.shurr@queensu.ca or by phone at (613) 533 6000 ext. 77363. For ethics concerns, please contact the General Research Ethics Board (GREB) at 1-844-535- 2988 (Toll free in North America) or email chair.GREB@queensu.ca.

You have not waived any legal rights by consenting to participate in this study.

By signing this consent form, I agree that:

- I have read the Informed Consent Form (ICF).
- I have had all my questions answered.
- I have been provided a copy or directed to keep a copy of the ICF for my records.
- A signed copy of the ICF will be kept by the research team.
- By consenting, I have not waived any legal rights

I consent to participation in the study, including the use of audio/video recording and quotes.

Yes ☐ No ☐

Appendix G: General Research Ethics Board Approval

Queen's University

Queen's University General Research Ethics Board (GREB)

RE: GREB Initial Ethics Approval

July 11, 2024

Miss Minuk
Faculty of Education\Faculty of Education\Unit REB Education
Queen's University

TRAQ #: 6041744
Study Title: "Teachers' Engagement with Individual Education Plans for Secondary Students with Autism"
Supervisor: Dr. Jordan Shurr
Review Type: Delegated
Date of Full Board Meeting: N/A
Date Ethics Approval Issued: July 10, 2024
Date of Expiry of Ethics Approval: July 10, 2025

Dear Miss Minuk

Thank you for submitting the above referenced study to The Queen's University General Research Ethics Board (GREB). GREB has reviewed the study and granted initial ethics approval for this study as of the date noted above.

Documents Approved:

Document Name	Comments	Version Date
Letter of Information/Consent Form (combined document)	Interview and think aloud task letter of information and consent form (clean)	2024/06/27
Letter of Information	Survey LOI (Clean)	2024/06/27
Survey	IEP Main Survey (Clean)	2024/06/27
Survey	IEP Follow up Survey (Clean)	2024/06/27
Other document	Master Linking Log	2024/06/27
EMAIL	Email scripts for participants who indicate interest/complete the consent process for phase 2.	2024/06/26
EMAIL	Email recruitment scripts for school boards	2024/06/26
Recruitment Letter/Email/Notice/Poster	Recruitment text and poster for Add*Ed social media (i.e., Instagram, LinkedIn, Twitter/X, and Facebook)	2024/06/26
Recruitment Letter/Email/Notice/Poster	Recruitment notice for table at Ontario Council for Exceptional Children Conference	2024/06/26
Recruitment Letter/Email/Notice/Poster	Text for research group (Add*Ed) communications (i.e., email text and poster for Listserv; text for magazine, newsletter, and website)	2024/06/26
Interview Guide	Semi-structured interview guide and questions for follow-up interview	2024/06/26

Protocol	Protocol for think aloud task	2024/06/26
Other document	Mock IEP to be adapted for think aloud task	2024/06/26

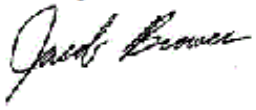
Documents Acknowledged:

Document Name	Comments	Version Date
Supervisor's letter/ e-mail	Supervisor's attestation email	2024/06/27

No deviations from, or changes to, the protocol should be initiated without prior written approval from GREB, except when necessary to eliminate immediate hazard(s) to study participants.

On behalf of the GREB, I wish you success in your research.

Sincerely,



Jacob Brower
Chair, General Research Ethics Board (GREB)
Associate Professor and Distinguished Faculty Fellow of Marketing,
Academic Co-Director (Business), Master of Digital Product Management
Smith School of Business
chair.greb@queensu.ca
Queen's University
Kingston, ON K7L 3N6

GREB operates in compliance with, and is constituted in accordance with, the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the International Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Products Regulations; Part 3 of the Medical Devices Regulations and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. Federalwide Assurance Number: FWA#: 00004184, IRB#: IRB00003062. GREB members involved in the research project do not participate in the review, discussion, or decision.

Appendix H: Deductive Coding Scheme

Codes and *Sub-Codes*	Definition	Example
Diversion*	Verbalizing difficulties, including utterances where participants indicate uncertainty and confusion (Beach & Willows, 2017, p. 69)	"Okay, where was I? Relevant medical conditions?"
Reading*	Reading words, phrases or sentences off the screen (Beach & Willows, 2017, p. 69).	"John has age appropriate receptive and expressive language skills but demonstrates challenges with pragmatic language."
Describing*		
Procedural Behaviours	Describing what they are doing or going to do or just did in the document (adapted from Beach & Willows, 2017).	"I'm just scrolling down, and they're doing their EQAO, and will receive some accommodations for that."
IEP Features or Format	Describing the spatial characteristics of the IEP; what participants notice about the format or features of the document (adapted from Beach & Willows, 2017).	"One of the functions in the [software] document you can do just the IEP layout, and you can go in and click the boxes you want."

IEP Content	Describing the actual components of the IEP (e.g., sections); what participants notice or observe in the document (adapted from Beach & Willows, 2017).	"And it looks like they're in the de-streamed English and math, and they're just accommodated in both."
Understanding***	Identifying and making sense of new information; including interpreting, classifying, summarizing, inferring, and explaining information that they read (adapted from Beach & Willows, 2017; Krathwohl, 2002).	"So that also tells me a great deal in terms of ability, and where they're established within the school system."
Connecting***	Recalling information; activating prior knowledge in relation to information presented on the IEP; finding a past example or discussing a concept that connects to one's practice or personal experience (adapted from Beach & Willows, 2017; Krathwohl, 2002).	"I had a student just recently that that happened, and when I received her into my class for this 45 days in civics, and she actually really appreciated that."

Reflecting**	Making comments that demonstrate metacognitive awareness relative to their own thinking (adapted from Beach & Willows, 2017).	"And then I never pay attention to the log of student/parent consultation. That is not something I've ever looked at to be honest."
Reasoning**	Providing a rationale for making a navigational decision; explaining why (Beach & Willows, 2017, p. 68).	"And I do read through all of the results so I can get a fuller picture of sort of the historical trajectory in diagnosing the student."
Analyzing**	Breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose (Krathwohl, 2002, p. 215).	"Not too surprising based on the report that I just read above that they are strong in gross [motor skills] compared to fine [motor skills], as I just mentioned of what I would do for that."
Evaluating**		
IEP Features or Format	Expressing a positive or negative feeling towards the usability and accessibility of the IEP (adapted from Beach & Willows, 2017; Krathwohl, 2002).	"So that's a helpful tool within our software for getting information out. But it's not as use user-friendly for a classroom teacher."
IEP Content	Making judgments or expressing opinions about an aspect of the IEP or information presented on	"So this transition plan is really helpful after the first couple of points."

	the IEP (adapted from Beach & Willows, 2017; Krathwohl, 2002).	
Active Planning**	Referring to program planning, reorganizing information to form or develop new ideas; constructing and creating; or generating and producing (adapted from Beach & Willows, 2017; Krathwohl, 2002).	"So this might impact how I present assessments that are like presentations, debate, or anything that would maybe end up putting this individual on the spot and how we could work around that and offering different options to them."

*Note. Adapted from Beach & Willows (2017) and Krathwohl (2002). *Denotes lower order cognitive process; **denotes higher order cognitive process; ***denotes elements of both.*

Appendix I: Inductive Coding Scheme

Codes and *Sub-Codes*	Description	Example
Teacher Background	Contextual information about the participant, including their current role.	"So I currently am pretty much, I have out of my six sections of teaching five are resource, and one is a math class."
Motivation for Participating in the Research	Explanations as to what interested the participant in the research.	"I've done my master's, so I find it just interesting reading studies and looking at how that's done. So, even though I'm very busy it's also really interesting to me to do this."
Thoughts about the Think Aloud	Reflections on the think aloud task as a research method.	"So it brought my thoughts to my consciousness in a different way than I feel like usually happens."
IEP Access	References to when and how participants receive the IEP in their school or school board.	"And then what I tend to do is I open each of them up, and I will download them and then put them in my own Google folder, so that I can quickly access it throughout the year. Now I do that, we can do that at

		the beginning, but as I mentioned they haven't been updated."
Order of Operations	References to how participants go about reviewing the IEP.	"I skip, skim, and jump. Now that I'm used to it, I go to the diagnosis, I go to areas of strengths and needs, and then I go to accommodations."
Barriers	References to any barriers to IEP access (e.g., delay in receiving them).	"I am more so referring to my notes again, because it's a mess to get into the system."
Facilitators	References to any facilitators of IEP access (e.g., useful software features).	"The good thing is that you can use your same login, not to create a new account, so they have sorted that out so you can use your just general school login and then search for your students and see them that way."
IEP Process	References to participants' actions and responsibilities related to the IEP process (e.g., family collaboration, collegial collaboration, data collection, etc.).	"And I would also reach out to parents, I usually do in the first week to all of my students, and just reach out to see if there's anything that I can do and establish some communication so that way if the student isn't

		comfortable sharing things with me yet I can still get that information through that avenue."
Relationship to Other Processes or Tools	References to other tools (e.g., Ontario Student Record, Individual Learning Profiles) participants engage with as part of the IEP process.	"I guess the occupational therapy assessment, I would have more questions about that and I guess you can look in the OSR."
IEP Content	References to IEP components.	See examples for sub-codes below.
Useful Components	References to components of the IEP participants find useful.	"This particular section of the IEP is probably one of the key ones for me in terms of the instructional, environmental and assessment accommodations."
Not Useful Components	References to components of the IEP participants do not find useful.	"The transition plan, definitely, I honestly don't even read it. Because I've read it once, I've read all of them."
Confusing Components	References to components of the IEP participants find confusing.	"'Minimizing background noise,' sure. 'Quiet setting.' I don't know how those two things are different, but okay."

"This Has Nothing to Do with Me"	References to an IEP components participants do not consider relevant to their role.	"This is a provincial assessment year. I think that would be fine, but that's not, that has nothing to do with me, really."
IEP Format	References to the way information is presented on the IEP.	"And yeah, at a glance, I can take in a lot of information quickly. So I think it's reasonably laid out for the most part."
Legal Obligations	References to the IEP and any related responsibilities being a legal requirement.	"Often it's just the legal parts of it which it's cause that's the law. That's what whoever drew up the law, that's the way they wanted it to look, or what needs to be there with respect to transition plan or something."
Use of the IEP in Instructional Planning	References to how participants use, have used, or intend to use the IEP in their instructional planning.	"'Attention to detail, topics and activities of interest, gross motor skills.' So there's an opportunity there to build the language activities around areas of interest."
Teacher Preparation	Comments on participants' preparedness to implement an IEP, its components, and related actions and responsibilities.	"I feel like I, my responsibility as a regular classroom teacher is, I will do what someone asks me to do, but I don't feel like I am knowledgeable enough, or aware of

		the school practice or policies enough to take initiative on these things."
Initial Teacher Education	Reflections on participants' initial teacher education and the extent to which it prepared them to understand and implement an IEP in practice.	"I don't actually remember ever seeing a draft IEP for one year. I mean, it was one year then. That was 25 years ago."
Role of Training and Experience	References to any additional special education training or experience participants have relative to the IEP.	"More recently with my training because I've started to realize from doing, I did Spec. Ed Part One and Two, kind of why those things are important."
Resource Engagement	References to where participants go when they require clarification about IEP components or have questions about supporting students with autism.	"But beyond that, it's really up to me. I feel very alone, like I have to figure this out. And yeah, I don't feel comfortable if things are not working, you know. I don't have enough information ready at hand to fix it, and it can be very, it's daunting."

Relational	Includes any human resources (e.g., special or general education colleagues, students' families, etc.).	"I feel like it sounds elitist, but there's like the core group of us that always work with the students with ASD and things like that. So we connect pretty frequently about that."
Internal	Includes any school, school board, or provincial resources (e.g., policy documents, Ministry-mandated Professional Development days).	"I'm sure that there is a document provincially somewhere. I'm 100% sure, it's gonna be in one of those Growing Success or like it's gonna be one of those for that. I just don't know where it is. I don't know what it is. I would have to find it."
External	Includes online (e.g., social media) and print (e.g., books) sources.	"I always made it a goal to read one professional book resource a semester. I haven't necessarily kept up with that for 25 years. But that is sort of like a goal, 1-2 a year, one in the fall-ish and one in the winter-ish."
Limitations of Resource Access or Training	Encompasses both barriers to accessing resources and/or training as well as a lack of relevant topics.	"I don't think that there's a lot offered either from the Ministry-mandated PD or the board ones. But again, that would depend on like what each board and what

		their goal and vision is for the year. And ours is not spec. ed. right now."
Desired Resources or Training	References to resources or training participants would like to see provided by their school or school board.	"Not just a bunch of theory on this might work. Like hey, try this. Here's an actual task. Here's everything you need."
General Perceptions	General commentary about the IEP in its entirety.	"So I feel like the IEP, does it enhance student learning? I would hope. But it is kind of like a necessary evil in a way that it doesn't necessarily do what we want it to do, but it seems to do a better job than nothing, maybe."
Shortcomings of the IEP	Negative references to the IEP in its entirety.	"So it's very, I find IEPs to be very impersonal, and the best way really to know the student is one obviously working with them, but if we had time and whatnot to actually speak with other, like previous, current teachers, whatever."

Importance of the IEP	Positive references to the IEP in its entirety.	"So I think I'm also very interested in this type of research, and just kind of whatever we can to maintain the importance or the sanctity of IEPs and the whole process that goes with it, instead of just being like, well it's cheaper to just let everyone have every accommodation they need or think they need or want."
UDL and Inclusion	Reflections on UDL and inclusive practice relative to IEP implementation.	"So if I was being, you know, a decent teacher, I would be employing UDL strategies in the first place, that would ideally cover most of this."
Part of Regular Practice	References to an aspect of the IEP already being part of a participant's practice.	"I would, I would probably write the transition piece, but I might also just kind of put that together because, you know, I would probably do that anyway."
Not Part of Regular Practice	References to an aspect of the IEP not being part of a participant's practice, or not one that they would implement.	"I would not do, yeah, I wouldn't do a visual schedule at all."

Plan to Build on Regular Practice	References to an intention to incorporate an aspect of the IEP into a participant's practice.	"So sometimes there's ones that stand out where I'm like, that's very specific for that student, like I want to make sure that they have that accommodation, such as using an alternative setting or having an alternative workspace."
Distinction between Elementary and Secondary	References to the difference between IEPs at the elementary and secondary levels.	"So okay, oh, transition plan. This is something else that I probably am not super excited about in terms of the IEP because life is just different in high school."
Challenges Associated with Implementation	References to any difficulties associated with implementing aspects of the IEP.	"And then, of course, the environmental. One of the most challenging things when I look at the environmental accommodations, the alternative workspace. That's becoming increasingly limited because the reduction of educational assistants in the system. That really challenges our playing field in in the school system I think."

"I Need to Know More"	References to participants recognizing that they need more information about an IEP component or information.	"Okay, I still would probably go back and learn more about reading assessment, because now I realize that I don't really understand reading comprehension as much as I probably should. So I would maybe read a little bit about that."
Autism-Specific Considerations	Reflections on participants' knowledge of autism and how it does or does not align with what they see in the IEP.	"Very typical of ASD students. It is a social disorder. So social settings would make sense as being a struggle. Also unstructured, changing between activities, finding that new routine, a very common struggle we see within our ASD population."
Student-Specific Considerations	References to individual student needs and student involvement in the IEP.	"But really ask the student, what works for you? They know best."
Context-Specific Considerations	References to school or school board-specific processes that will affect IEP implementation.	"And my board also, we don't put this piece about however many minutes people receive. That would only be like highly specialized supports, but we

		wouldn't put the resource teacher or the guidance counselor on there."
Subject-Specific Considerations	References to the participants' teachable subjects relative to the IEP.	"You know, and English, because it's communication a lot of times there's communication challenges for these students. And so a lot of it is on you to kind of assist them."

Appendix J: Thematic Maps from the Deductive Analysis

Figure J.1

Initial Thematic Map for the Deductive Coding Scheme

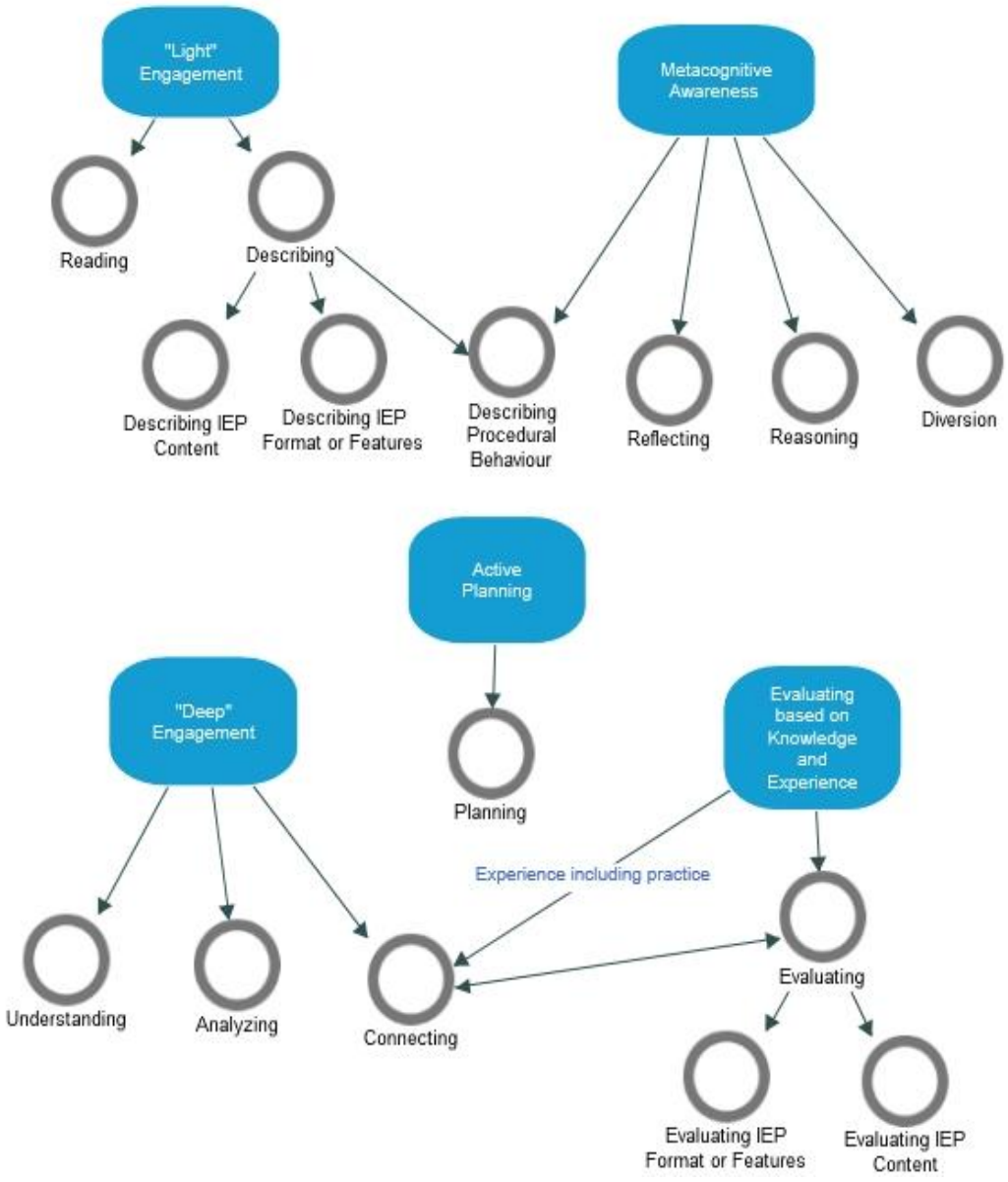
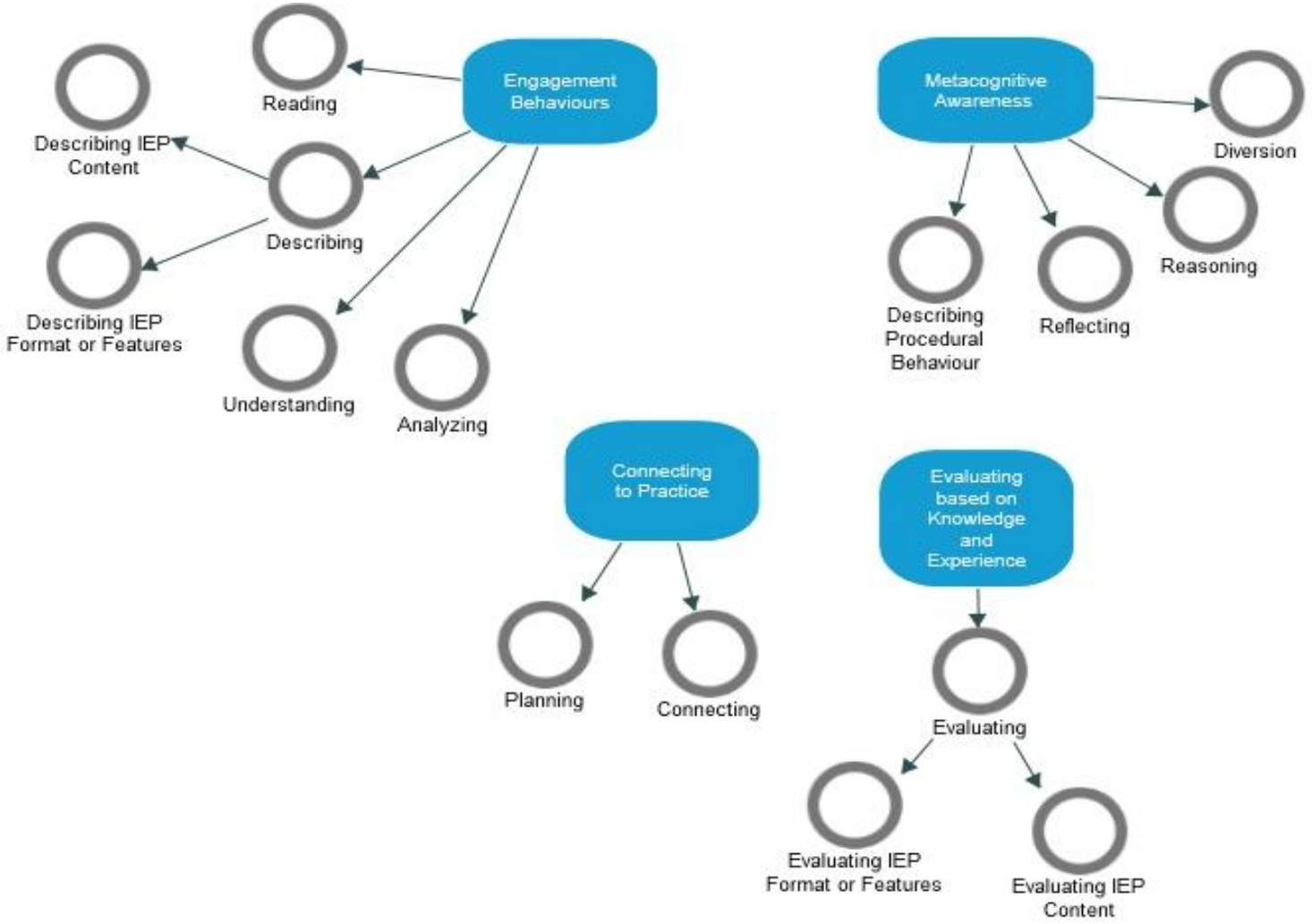


Figure J.2

Refined Thematic Map for the Deductive Coding Scheme



Appendix K: Thematic Maps from the Inductive Analysis

Figure K.1

Initial Thematic Map for the Inductive Coding Scheme

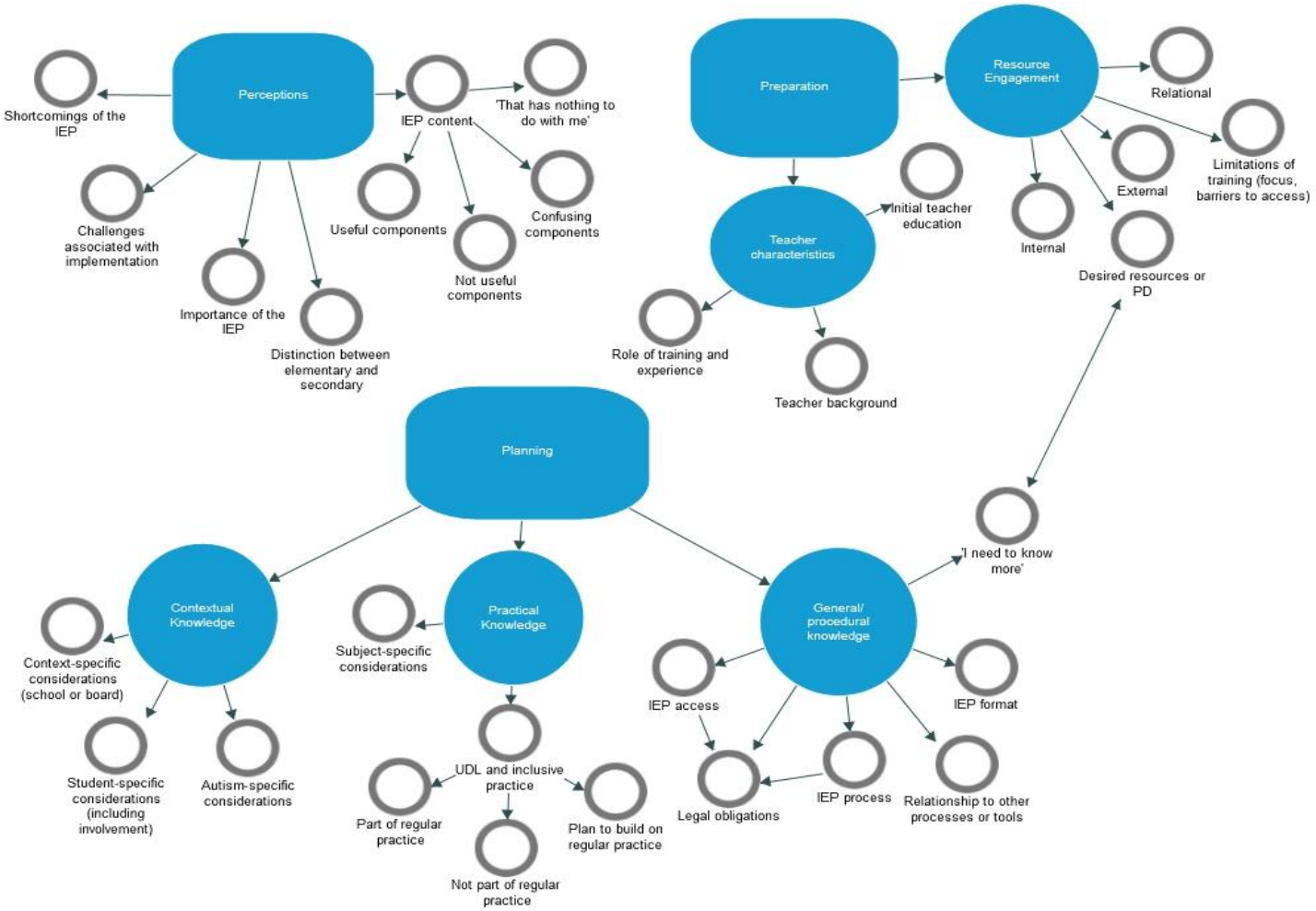


Figure K.2

Refined Thematic Map for the Inductive Coding Scheme