PROFESSIONAL SUPPORT FOR BILINGUAL LANGUAGE ACQUISITION IN CHILDREN WITH DEVELOPMENTAL DISABILITIES: A SURVEY OF SPEECH-LANGUAGE PATHOLOGISTS IN BRITISH COLUMBIA, CANADA

by

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Abstract

In a multicultural country, bilingualism can benefit many children, and be a necessity for some. However, support for bilingualism is not always a priority for children with developmental disabilities. Recent research has at least partially contradicted the 'common sense' view that bilingualism is detrimental to or unrealistic for these children. This study surveyed 42 speech-language pathologists from British Columbia, Canada to determine the extent to which children with developmental disabilities are exposed to languages other than English in professional settings. Questions considered two language learning scenarios: English language learners (ELLs) and optional second language learners (e.g. French immersion students). The questions probed access to language programs in the education system, as well as the languages used for assessment and treatment. Results showed that the severity of diagnosis impacted inclusion in language programs, most notably for optional second language learners. However, severity did not appear to play a role in the language of assessment and treatment. The opinions of the SLPs also differed significantly from their practices, showing that they would like to see more access to bilingual services than is currently the case.

Preface

The data for this survey were collected as part of an international collaboration spearheaded by Dr. E. Kay-Raining Bird at Dalhousie University, with sites in Halifax, Montreal, Vancouver, the US, the UK and the Netherlands. The survey questions were initially developed at a group meeting including members from each site, in which I participated. They were then finalized via consultation with the entire group. I was primarily responsible for dissemination of the survey in British Columbia. When the survey closed, I conducted the analysis and wrote this thesis, in consultation with Dr. S. Marinova-Todd, Dr. E. Kay-Raining Bird, Dr. P. Mirenda and Dr. P. Colozzo.

The project received ethics approval at UBC from the Behavioural Research Ethics Board under the title “Opportunities for Bilingualism in Preschool and School-age Children with Developmental Disabilities: An International Investigation. Part 2, The Survey” (H14-00088).

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Introduction

In an increasingly globalized society, bilingualism and multilingualism are topics of interest for many policy makers, educators, and child development specialists. Many children are growing up in situations where bilingualism is a necessity, rather than a choice (de Houwer, 1999); they need two or more languages in order to communicate with important people in their lives, and function in society (note that in the interest of consistency, this report will henceforth refer to children speaking more than one language as bilingual). Even for children whose home language matches the majority language, learning additional languages can provide economic and social benefits (Government of Canada, 2003). Generally, with the guidance of parents and education professionals, opportunities are presented to children to enable them to learn the languages they need, or might benefit from.

However, for children with developmental disabilities, the need for bilingualism is not always perceived as a priority. Many parents of children with disabilities such as Down syndrome, specific language impairment (SLI), and autism are advised by professionals, including pediatricians, early childhood educators and speech-language pathologists, to raise their children monolingually (e.g. Thordardottir, 2002, Kohnert et al., 2005, Kay-Raining Bird, Lamond & Holden, 2011). Additionally, sometimes the services these children require are not offered in minority languages, and so they may only receive professional support in developing the majority language (D'Souza, Kay-Raining Bird & Deacon, 2012). As for opportunities to learn additional languages in school, children with any kind of learning disability are often counselled away (Genesee, 2007).

Overall, the above-cited research reports that bilingual language development receives less support among the population of children with developmental disabilities than among

typically developing children, even though they are just as likely to require two or more languages to engage with their family, community, and society. Additionally, these children are given fewer opportunities to learn a second language in school. However, these are trends observed across North America: they may hold true to a greater or lesser extent in different regions. The focus of this study will be to probe the available support for bilingual language development in children with developmental disabilities in the context of British Columbia, Canada. First, however, we must establish the local linguistic context, review the literature to determine best practices, and examine the educational policies in place in this setting.

The need for bilingualism

In British Columbia (BC), bilingualism is a highly relevant phenomenon, both because of the high number of families speaking home languages other than English, and because of the province's situation in a bilingual country. Canada is home to a multitude of people with bilingual proficiencies and needs, making this an important issue for policy makers in education and special needs arenas. Reports generated from the 2006 census data revealed that 27.5% of British Columbians identified themselves as immigrants to Canada (Ip, 2008). Immigration rates have traditionally been high in BC; since 1911, the percentage of population identified as immigrants has never dipped below 20% and is currently on the rise, having surpassed 25% (see Ip, 1992, Ip, 2003 and Ip, 2008). In the city of Vancouver, these numbers are higher, with slightly over 45% of the population currently consisting of immigrants (Ip, 2008). The countries of origin of immigrants to BC have shifted over the years; before 1972, most immigrants to BC were from Europe (primarily England and Germany), but for the last few decades immigration from Asia has greatly increased and outstripped European numbers (Ip, 2005). In 2012, BC welcomed 36,176 immigrants, 73% of whom arrived from Asia (BC Stats, 2013).

Of course, not all immigrants speak a language other than English at home, and not all people who speak a language other than English at home are immigrants. In BC, the proportion of people who actually speak a language other than English as their main home language is 16.5%, and these speakers report an array of over 70 different languages, with Chinese and Punjabi as the most commonly occurring (BC Stats, 2008). This means that many British Columbians are actively using a wide variety of languages in everyday family and (in some cases) community life. In this vibrant multi-linguistic setting, it is inevitable that many children with developmental disabilities will grow up in homes that require them to be bilingual in order to participate in both family life and in society at large.

In addition to the linguistically diverse population, BC is situated in Canada, a country that is officially bilingual, with English and French as the national languages. Though the only official language common in BC is English, it is beneficial for British Columbians to learn French in order to open up more job opportunities and to facilitate movement or travel within the country (Government of Canada, 2003). In addition to this, in BC the children of Francophone parents are entitled to receive their education entirely in French (School Act, 1996). It is also a requirement of the educational system that every student learns a second language, usually French, for four years (Ministry of Education, 2004), though certain children are exempt, which will be discussed below.

Beyond this, many non-francophone families opt for increased French education via the French immersion program, which aims to create fluently bilingual graduates (Ministry of Education, 1996a). In this program, schooling is provided in French all or part of the time – the ratio of French to English schooling changing by grade level. The Ministry of Education outlines the following breakdown: from kindergarten to grade 3, the children receive 100% of their

schooling in French; from grade 4 to grade 7, 80% of the curriculum is taught in French; from grade 8 to grade 10, 50-75% of instruction is in French; and in grades 11 and 12, at least 25% of schooling is in French (Ministry of Education, 1996a). This program may receive extra funding from the Federal government (Ministry of Education, 1996b). In BC, given the high rates of immigration, other language immersion programs have also been implemented, most notably Mandarin bilingual programs in the Greater Vancouver Area (e.g. Vancouver School Board, n.d.(a), Vancouver School Board, n.d.(b), Burnaby School Board, 2013, Coquitlam School District, n.d.). This is another opportunity for children to be schooled partially in a language other than their home language and other than English, facilitating the acquisition of an additional language.

It is clear that in BC, the need for bilingualism is frequent and important. Many children, both with and without developmental disabilities, speak languages other than English as a first language (L1) and need support to learn English as their second language (L2), since it is the majority language and the language of schooling. These children will be referred to as English language learners (ELLs). Alternatively some parents may be raising their children in both English and their heritage language from birth. These children will be referred to as simultaneous bilinguals. Additionally, in a bilingual country with a large immigrant population, there are cultural and economical motivations for increased bilingualism even among those who do not have a familial need for it. An L2, usually French, is a school requirement, and there is a popular demand for French immersion programs. Other language immersion programs are also beginning to emerge, increasing the list of language learning opportunities. Children who participate in language classes or immersion programs will be referred to as optional second language learners.

We have seen that there are practical social and economic reasons for children to become bilingual in BC. However, there is one further argument for bilingualism we must consider: the metalinguistic and cognitive benefits of bilingualism seen in typically developing children, as well as older adults. Recent research indicates that bilingualism can positively influence elements of non-linguistic cognition (Kaushanskaya & Marian, 2009). Many aspects of executive function have been shown to be more efficient in bilinguals. For instance, typically developing bilingual children show better selective attention and inhibitory control than their monolingual peers (Bialystok & Martin, 2004), an advantage that persists into adulthood (Bialystok, Craik & Ryan, 2006). Similarly, task switching is easier for bilingual adults than monolinguals (Prior & MacWhinney, 2010). There is also evidence that lifelong bilingualism can delay the age-related decline of executive functions in older adults (Bialystok, Craik, Klein and Viswanathan, 2004; Bialystok, Craik and Ryan, 2006; Bialystok, Craik and Luk, 2008).

Overall, a high degree of bilingualism has been shown to have a positive impact on cognition in the typically developing population. There is currently no evidence that children with developmental disabilities show a similar "bilingual advantage". However, if they follow the pattern of typically developing children, bilingualism could help cognitive development in this population as well.

Bilingualism in children with developmental disabilities

When considering populations with developmental disabilities, the benefit of bilingualism has historically been considered to be complicated by this population's difficulty with language acquisition. Many professionals have counselled families not to expose their children with developmental disabilities to more than one language (e.g. Thordardottir, 2002, Kohnert et al., 2005, Kay-Raining Bird, Lamond & Holden, 2011). It is unfortunate that until

recently, research upon which to found an evidence-based opinion was lacking, and professionals and families had to trust their instincts. However, in recent years this gap in knowledge has begun to be addressed. Bilingual language acquisition in populations with developmental disabilities is a little better understood, at least in the case of ELLs and simultaneous bilinguals. There is as yet very little evidence regarding the case of optional second language learning. Seven studies to date have examined bilingualism among individuals with Down syndrome. The details of these studies are summarized in table 1 below.

Table 1. Research on bilingual language development in children with Down syndrome (DS)

Study	Participants	Domains studied	Measurement tools	Relevant results
Cleave, Raining-Bird, Trudeau & Sutton (2014)	DS-B: N=14 (aged 5;8 – 19;3) DS-M: N=12 TD-B: N=9 TD-M: N=11 Mental age-matched with DS-B group	Novel vocabulary learning via syntactic bootstrapping in English (L1 of all participants)	Task requiring children to learn novel words using "a" to signal nouns and "ing" for verbs	No differences between the DS groups on task performance
Feltmate & Kay-Raining Bird (2008)	DS-B: N=4 (aged 4;11 - 7;9) Each mental age-matched with one DS-M and one TD-B child; Produced min. 100 words; MLU <3.5	Oral vocabulary and morpho-syntactic development in both languages	PPVT/EVIP PLS-3 Language samples evaluated for vocabulary and morphosyntax	No difference between results of DS-M and DS-B children in English; L2 varied with input
Kay-Raining Bird, Cleave, Trudeau, Thordar-dottir, Sutton, & Thorpe (2005)	DS-B: N=8 (aged 4;7 – 11;5) DS-M: N=14 TD-B: N=11 TD-M: N=18 Mental age-matched with DS-B group; Produced min. 100 words; MLU <3.5	Oral vocabulary and morpho-syntactic development in both languages	PPVT/EVIP PLS-3 MCDI Language samples evaluated for MLU and vocabulary	No significant differences between L1 results of DS groups; L2 attainment levels varied greatly
Edgin, Kumar, Spano, & Nadel (2011)	DS-B: N=13 DS-M: N=28 All children aged 7-18	Cognitive: memory, executive function Oral language: receptive vocabulary, answering questions with one word, adaptive communication	Arizona Cognitive Test Battery	No significant differences between groups; No correlation between amount of second language exposure and cognitive profile
Trudeau, Kay-Raining Bird, Sutton, & Cleave (2011)	DS-B: N=18 (Aged 4;4-14;6) Most exposed to both languages before 5 months, all before age 4;0; 15 were followed up for 10 months-8 years	Receptive and expressive vocabulary	MCDI	Vocabulary in L1 developed; Vocabulary development in L2 linked to amount of exposure

Study	Participants	Domains studied	Measurement tools	Relevant results
Vallar & Papagno (1993)	Case study: a 23-year-old trilingual (Italian, English, French) woman with DS	Phonological short-term memory; Vocabulary acquisition	Multiple tests of general cognitive ability; Vocabulary, reading, and phonological awareness tasks	Phonological short-term memory and vocabulary acquisition within normal range
Woll & Grove (1996)	Case study: 10-year-old twins with DS, bilingual in British Sign Language (BSL) and English	In English: articulation In both languages: morpho-syntax and vocabulary	BPVS TROG EAT ITPA Author-developed tests for vocabulary and morpho-syntax in BSL; Language samples for morpho-syntax and vocabulary	Language deficits in both languages

Note: DS-B = bilingual children with DS; DS-M = monolingual children with DS; TD-B = typically developing bilingual children; TD-M = typically developing monolingual children. L1 = first language; L2 = second language; PPVT = Peabody Picture Vocabulary Test; EVIP = Échelle de Vocabulaire en Images Peabody; PLS = Preschool Language Scale; MCDI = MacArthur-Bates Communication Development Inventories; BPVS = British Picture Vocabulary Scale; TROG = Test for Reception of Grammar; EAT = Edinburgh Articulation Test; ITPA = Illinois Test of Psycholinguistic Abilities

It is important to note that most of the group studies focused on fairly rudimentary levels of language (e.g. age of first words, vocabulary size), though Feltmate and Kay-Raining Bird (2008) is an important exception. This is particularly problematic given that the participants in the studies ranged in age from childhood to well into adolescence. Nonetheless, at this level, none of the studies found that becoming bilingual disadvantaged children with Down syndrome; their language skills in their dominant language (or both languages if they were balanced bilinguals) matched those of monolingual children with Down syndrome. Their performance on

neuropsychological tests of general cognitive functioning was comparable to that of monolingual peers with Down syndrome. The case studies, which do not permit comparison with monolingual peers, nonetheless show people with Down syndrome learning and functioning in multiple languages. The consensus from this small body of literature is that many (though possibly not all) people with Down syndrome are capable of learning two languages, at least for the basic levels of labelling, novel word learning, and early syntax measured in these studies. There were no instances where bilingualism was seen to detract from L1 acquisition. The results are limited, however, to oral/auditory language – more research is required on skills in the written modality. Additionally, only Vallar and Papagno (1993) discuss an optional second language learner; all the children in the other studies were ELLs and simultaneous bilinguals.

Four studies to date have formally examined the language capacities of bilingual children with autism. The details of these studies are summarized in table 2 below.

Table 2. Research on bilingual language development in children with autism

Study	Participants	Domains studied	Measurement tools	Relevant results
Hambly & Fombonne (2012)	ASD-B: N=45 (24 simultaneous bilinguals, 21 sequential bilinguals) ASD-M: N=30 All children aged 3;0 – 6;6	Social abilities; Developmental language milestones (e.g. age of first words/ phrases); Vocabulary	CDI SRS VABS-2, interpersonal subtest Questions from the ADI-R	No significant differences between groups on any language measures in L1; L2 vocabularies much smaller than in L1
Petersen, Marinova-Todd & Mirenda (2011)	ASD-B: N=14 (Chinese-English) ASD-M: N=14 All children aged 3;7–6;1 Productive vocabulary of min. 30 words	Vocabulary Auditory comprehension Expressive communication	PPVT-3 PLS-3 subtests CDI and its equivalent Chinese versions	No differences found on English language scores between groups; No differences found between Chinese and English scores of ASD-B participants
Seung, Siddiqi & Elder (2006)	Case study: a Korean-English bilingual child with ASD, aged 3-5; Study details two years of bilingual language therapy	Vocabulary and morpho-syntax in both languages	PPVT-3 CDI EVT RDLS	Substantial growth in L1 and L2; At final testing, L2 vocabulary was within normal limits
Ohashi *et al.* (2012)	ASD-B: N=20 ASD-M: N=40 All aged 2;0 – 4;4 Productive vocabulary of min. 30 words	Early oral language	PLS-4 VABS-2 ADOS Age of first words and phrases	No differences found between ASD-B and ASD-M groups

Note: ASD-B = bilingual children with autism spectrum disorder; ASD-M = monolingual children with autism spectrum disorder; VABS-2 = Vineland Adaptive Behaviour Scales, 2nd edition; SRS = Social Responsiveness Scale; ADI-R = Autism Diagnostic Interview – Revised; ADOS = Autism Diagnostic Observation Schedule; EVT = Expressive Vocabulary Test; RDLS = Reynell Developmental Language Scales

Again, these studies only looked at very basic language skills, principally early vocabulary and social domains. In this case, unlike with the Down syndrome studies, all the participants were quite young – under seven years of age – so the language measures used may be more appropriate, but we are still without information concerning the development of higher

level language skills in this population. Nonetheless, as far as it goes, the message is consistent; across the studies, individuals were observed to be acquiring their first languages to the same level as their monolingual peers, and their second languages to greater or lesser extent. Again, it should be noted that none of these studies focus on optional second language learners. All of the above-cited research also concerns oral/auditory language.

There has been one study that examined the written modality in bilinguals with autism, among other domains, but it used measures of holistic parental report without any direct testing of children. Kay-Raining Bird, Lamond and Holden (2011) surveyed parents of children with ASD (aged 2;11-22;00) and compared the responses of those who chose to raise their children bilingually with those who did not. They had the parents rate their child's oral receptive and expressive language skills, as well as reading and writing skills, in each language they spoke on a graded scale from "not at all" to "like a fluent adult". The results supported the studies in table 2; they found no difference between parental responses concerning the L1 of bilinguals and the only language of monolinguals, in either oral or written language, indicating no detrimental effect of bilingualism.

In comparison with the available literature on populations with Down syndrome and autism, studies of bilingual development in children with specific language impairment (SLI) are relatively more abundant. In their review of 16 studies, Paradis, Genesee, and Crago (2010) report a pattern consistent with that seen for the previous two populations; children with SLI are not disadvantaged in their L1 development compared with monolingual peers (see Paradis, Crago, Genesee & Rice, 2003, Paradis, Crago & Genesee, 2006). Development does occur in the second language of children who are majority language learners (Rothweiler, Chilla & Clahsan, 2010). Attainment levels may vary based on amount of exposure to L2, and follow the same

patterns as first language development in that particular child (Paradis 2010). In contrast to the research on autism and Down syndrome, some later-developing language structures (e.g. Paradis, Crago, Genesee & Rice, 2003, Paradis, Crago & Genesee, 2006) have been targeted.

Additionally, unlike with the previous two populations, there has been one group study on children with language delay who are optional second language learners (Bruck, 1982), and this study also targeted higher level language and academic achievement, albeit only at the grade 1 level. Children with impaired L1 development who were enrolled in French immersion programs were compared with non-French immersion peers who had similar profiles of language development. They completed a series of literacy and academic tests (e.g. math, for which French immersion students received only French-language instruction): no differences were found on achievement levels between the two groups. Additionally, the French skills of the children with SLI in French immersion, as measured by a French listening comprehension test, surpassed the French skills of typically developing children in the English program who were taking regular French classes. Therefore, French immersion was facilitating their language development in French, with better outcomes than could have been expected in the English program. It should be noted, however, that Bruck was not operating under the contemporary definition of SLI, which means that these results should be viewed with some caution (Genesee, 2007).

Overall, the trend from this small body of literature supports the capacity for bilingualism among children with disabilities, mainly in the case of children who are ELLs or simultaneous bilinguals; notably, it does not reveal any detriment to first language development. The practical advantage of being able to converse with family, neighbours, teachers and community members does not seem to be outweighed by limitations of the language system. In fact, imposed

monolingualism carries its own risks for ELL and simultaneous bilingual children: Wong-Fillmore (2000) discussed the increased potential for social distance within the minority-language families of typically developing children who move to North America. If the children are raised entirely in the dominant local language, children and parents cannot converse comfortably in a common language, and it is difficult for the parents to raise their children effectively. The same caution has been raised in studies concerning the families of children with developmental disabilities. Yu (2013) discussed the costs incurred to the quality of language input – particularly important to children with language delays – when parents attempt to speak only a language they are not comfortable with. Another consequence is that the child will be excluded from minority language conversations, causing reduced language input. Jegatheesan (2011) outlined the emotional conflict minority-language families of children with developmental disabilities can feel upon receiving this advice from professionals, and the loss of culture, and socialization it could bring about if followed.

It would seem that families and clinicians are faced with a cost-benefit analysis. Choosing one language can, in some circumstances, be detrimental. Choosing two languages might require a good deal of work from the family and professionals; nonetheless, hopeful trends have emerged regarding bilingual language development in children with developmental disabilities. Overall, more research is required for a fuller profile of language attainment in these populations, especially concerning ultimate attainment, written language development, and the case of optional second language learners.

Laws and policies regarding special education in BC

In BC, special education for school-aged children is provided as part of the public school system by the Ministry of Education, though families certainly have access to private schools

and supports such as private speech-language pathologists should they so choose. The Ministry provides legal guidelines for how publicly available education should best be delivered, out of which arise three main principles:

1. Integration with additional individual support is the preferred education delivery model

The Special Needs Student Order (2007) stipulates that children with special needs are to be educated in integrated settings unless the needs of the student in question or of the other students indicate otherwise. This focus on integration is indicative of the value placed on including children with special needs in appropriate settings. This value could extend to cover the development of bilingualism; if a child with developmental disabilities could benefit from learning a second language, it would be appropriate to allow them inclusion in this setting as well.

2. Each child with a 'special needs' designation is entitled to an Individual Education Plan

The Special Needs Student Order (2007) also indicates that every child with special needs is entitled to an Individual Education Plan (IEP) developed by a team including the classroom teacher, other appropriate school personnel, the parents, and, where appropriate, the child (Ministry of Education, 2013). This means the school tailors instruction and the expectations according to the abilities of the child with special needs. The school also provides extra support, sometimes in the form of resource teachers or educational assistants. This is how the school accommodates the needs of the child within the (usually) integrated setting they have provided.

3. The Ministry provides funding to public schools for each child identified with special needs.

In order to fund the extra services required to support the students with special needs, the ministry provides yearly funding to the school for each child with a 'special needs' designation. The designation relies on a medical or psychological diagnosis, and the funding categories are displayed in Table 3 (Ministry of Education, 2002). This funding is provided to the school to be used according to discretion to support the child's needs. It is of note that children with SLI would not receive funding under any of these categories.

Table 3. Ministry of Education funding categories for children with special needs

Category	**Funding**
A. Dependent Handicapped B. Deafblind	$36,600
C. Moderate to Profound Intellectual Disabled D. Physically Disabled, Chronic Health Impaired E. Visually Impaired F. Deaf/Hearing Impaired G. Autism Spectrum Disorder	$18,300
H. Intensive Behaviour Interventions/ Serious Mental Illness	$9,200

Laws and policies regarding bilingual education for children with special needs

Though Ministry of Education has many policies regarding language of instruction and instruction of language, the policy documents regarding language contain very little explicit mention of children who have special needs. However, there are three main ways in which this population is considered in the language learning context:

1. Children with special needs are eligible to be educated in the same language of instruction as other children

The first consideration is actually one of omission: children with special needs are notably *not* excluded from language learning settings. When it comes to the language of education, the School Act (1996) identifies that all students are entitled to an education in English (or French, if at least one of their parents are Francophone). It also states that any school board may offer programs in other languages if they have the approval of the minister. This third option allows for French immersion programs for non-francophone students, as well as, in the Vancouver, Burnaby, and Coquitlam school districts, Mandarin bilingual programs designed for children with little or no previous exposure to Mandarin. There are no laws or policies in place to exclude or discourage the families of children with developmental disabilities from entering their children in French immersion – the policy is explicitly first come, first served.

It should be noted, however, that elsewhere in Canada, the extra support (e.g. appropriately trained teachers, learning support services) these children require is not necessarily available within French immersion programs, prompting them towards education solely in English (Genesee, 2007). Interestingly, the website for the Mandarin language program in Burnaby states that it is "designed for students who have strong English language skills" (Burnaby School Board, 2013), indicating that similar factors may be in play in the BC context. This study aims to further explore the situation.

2. Children with developmental disabilities are eligible for special needs *and* ELL funding

For ELLs, services are available to help them develop their English skills. These can take many forms – a good deal of discretion is left up to the individual school boards and schools.

Depending what is deemed necessary, they might provide separate classes, pull-out services, or consultation with the classroom teacher (Ministry of Education, 2012). The ministry provides funding to each child with an ELL designation to enable these services ($1,340 per year for a maximum of 5 years) (Ministry of Education, 2011a).

Notably, children can be eligible for both ELL and special needs funding as long as they fulfill the criteria for both categories (Ministry of Education, 2013). It is interesting, however, that the Ministry of Education released a newsletter (Ministry of Education, 2011b) to teachers elucidating this fact, as it seems many teachers were under the impression that schools had to choose between the sources of funding for a given child. This could indicate that in practice, many students may not receive all the funding to which they are entitled due to confusion over the rules.

3. Children with developmental disabilities are not required to learn a second language

Another way in which the Ministry of Education explicitly addresses the language learning of children with developmental disabilities is by making them exempt - though not restricted - from the curricular requirement to learn a second language, usually French, in grades five through eight (Ministry of Education, 2004). ELL students, with or without developmental disabilities, are also exempt from this requirement (Ministry of Education, 2004). The rationale is that these students can use the extra time to address their other language learning needs (e.g. using that period for a session with the speech-language pathologist, or to receive ELL support).

The current study

Supporting bilingualism in a population that already requires many other supports is admittedly difficult, and may require input from multiple professionals, both public and private.

In BC, where bilingualism is ubiquitous, it is important to investigate to what extent these children and their families are receiving appropriate support. This study will attempt to establish what the current practices and opinions are among BC speech-language pathologists (SLPs) as regards the bilingual education of children with developmental disabilities. The Ministry of Education guidelines are helpful but limited, leaving a lot of discretion up to individual schools and school boards. Additionally, many families receive early intervention services prior to school age, and/or access private therapy; the multilingual practices of these service deliverers are not easily gleaned from publicly available sources.

SLPs in particular were chosen as the focus of this study since they are professionals concerned specifically with language development in children with developmental disabilities. They work both publicly (e.g. schools, health units, hospitals) and privately in BC, and as such are found in most settings where children with developmental disabilities receive services. Therefore, the current study examined survey data collected from SLPs in a variety of education and special needs support settings in order to obtain a broad information set from the 'front line' deliverers of services to children with developmental disabilities. The study addressed the following questions about the extent to which bilingualism is supported in children with developmental disabilities:

1. Do the responses of SLPs working in BC differ based on degree of impairment?

It is possible that practices and opinions vary based partially on the degree of impairment exhibited by the child. The questions are designed to elicit responses to the same question as applied to different children – (a) typically developing children (TD), (b) children with mild autism or a mild intellectual disability (mild ASD/ID), (c) children with severe autism or a severe

intellectual disability (severe ASD/ID), (d) children with a language or reading impairment only (LI/RI), and (e) children with any type of disability who use augmentative or alternative methods of communication (AAC). The influence of diagnosis on practices and opinions is examined.

2. Are there different prioritizations of different types of bilingualism?

In order to narrow the scope and permit clearer comparisons, this study focuses on only two of the three groups of bilingual children identified above: ELLs and optional second language learners. There were two reasons for this decision. Firstly, both ELLs and simultaneous bilinguals are represented in the literature, while there is very little research on optional second language learners; it is worthwhile to compare the SLPs' opinions concerning a situation in which they have evidence to guide them with their opinions concerning a situation where they do not. Secondly the situation of ELLs more closely parallels that of optional second language learners; both learn their second language outside of the home, with primary support in school. For this reason, similar questions can be asked about ELLs and optional second language learners, permitting direct comparison.

3. Is there a mismatch between SLPs' practice and opinion?

Some respondents may provide services in a given way at work based on policy or resources, but hold different opinions about how bilingualism in these populations should be addressed. This study examined this potential difference between practice and opinion.

Methods

Materials

The survey data that were analyzed in this project were part of a larger project investigating the bilingual opportunities for children with developmental disabilities in a number of locations in Canada and internationally. The questions in the survey were developed in collaboration and standardized across the sites. Select questions were chosen to be examined in this study. Of these questions, 9 gathered demographic data on the respondents, 6 concerned ELLs, 6 concerned optional second language learners, and 2 were open-ended questions probing the participants' views on systemic barriers and important changes in the field of bilingual education for children with developmental disabilities. The questions focused on the practices followed by the respondents, as well as their personal opinions. Please see Appendix A for a complete list of the survey questions that were considered in this study. The survey was hosted by research partners at Dalhousie University, using Opinio © (1998-2014) software. Data were collected for slightly over four months (February 7 to June 15, 2014). Upon closing the survey, data were downloaded to SPSS (version 22.0 for Windows) for analysis.

Participants

Dissemination of the survey to the SLPs of BC was accomplished via the BC Association of Speech Language Pathologists and Audiologists (BCASLPA) and the British Columbia Association of Child Development and Intervention (BCACDI), as well as through several educational practitioner associations under the umbrella of the BC Teachers Federation (BCTF). The newsletter editor or main contact person for each organization was approached by email, and agreed to run an ad in their respective newsletters, or disseminate the ad on their website or email list. The ad contained a link to the survey, so the SLPs could access it directly. In total, 56 SLPs

accessed the survey. Of these, 42 were included in analysis. The remaining 14 SLPs were excluded because they did not complete any questions beyond the demographic information.

Results

Demographics

Of the 42 SLPs who were included in the analysis, 41 (97.6%) were female and one (2.4%) was male. In regards to age, eight participants were under 30 (19.0%), 17 were 30-39 (40.5%), seven were 40-49 (16.7%), eight were 50-59 (19.0%) and two were 60 years or older (4.8%). Three participants did not report the years of experience they had in their position. The remaining 39 had a mean of 13.03 years (S.D. = 10.45) years of experience, ranging from 1 year to 35 years. A majority of them (31, 73.8%) worked in the Greater Vancouver Area, while 11 (26.2%) worked elsewhere in BC. The participants were asked to identify their work environments from a list. Participants were able to choose more than one option. Table 4 shows the work settings in which the SLPs practice.

Table 4. Participants' work environments

Setting	Frequency	Percent
Early Intervention	7	16.7%
School	15	35.7%
Assessment & Intervention Centre	7	16.7%
Health Care/Clinic	17	40.5%
Community-based Centre	3	7.1%
Language Centre	2	4.8%
Private Practice	5	11.9%

The majority of the SLPs (31, 73.8%) felt they did not have adequate access to professional development opportunities related to bilingualism, while the remaining 11 (26.2%) felt they did. In contrast, the majority (32, 76.2%) felt that they did have adequate access to

professional development opportunities related to developmental disabilities, while 10 (23.8%) felt they did not. The vast majority of the participants (40, 95.2%) reported that the primary language of their workplace was English. One (2.4%) reported French as the primary language, and one (2.4%) reported "English and many languages; Punjabi, Hindi, Urdu, Cantonese, Burmese, Taiwanese, etc." Thirty-three (78.6%) participants reported using English only in daily life. Of the nine who reported using English plus one or more other languages, four (9.5%) used French, two (4.8%) used both French and Spanish, one (2.4%) used Gujrati and Kutchie, one (2.4%) used Mandarin, and one (2.4%) used Tagalog.

Analyses: Service differences based on impairment and/or bilingualism type

The answers elicited from the participants were measured on an ordinal scale (for practice: Always, Often, Sometimes, Rarely, Never, Don't know, Not applicable; for opinion: Strongly agree, Agree, Neutral, Disagree, Strongly disagree, Don't know, Not applicable). In accordance with Norman (2010) it was deemed appropriate and maximally informative to consider the data as ratio and convert them to numerical values. This way, it was possible to obtain mean responses. To this end, the 'Don't know' and 'Not applicable' answers were removed, and all answers from the Always-Never and Strongly agree-Strongly disagree scales were assigned numbers from 1 to 5, respectively. The data for the ELL-related questions are presented in table 5, and the data regarding optional second language learners are presented in table 6. As different numbers of participants answered every question, the Ns for each question are reported.

Table 5. Descriptive data from the six questions concerning ELLs

	_____ who are ELLs <u>are currently exposed to English only</u> in your work environment	**In your opinion, _____ who are ELLs <u>*should* be exposed to English only</u> in your work environment**	**_____ who are ELLs <u>currently receive ELL services</u> in your work environment**	**In your opinion, _____ who are ELLs <u>*should* receive ELL services</u> in your work environment**	**_____ who are ELLs <u>are assessed and treated in English only</u> in your work environment**	**In your opinion, _____ who are ELLs <u>*should* be assessed and treated in English only</u> in your work environment**
	Mean SD *N*	**Mean** SD *N*	**Mean** SD *N*	**Mean** SD *N*	**Mean** SD *N*	**Mean** SD *N*
TD	**2.59** 1.04 *39*	**4.00** 1.19 *39*	**2.97** 1.60 *31*	**2.40** 1.50 *30*	**2.39** 1.23 *36*	**3.85** 1.26 *34*
Mild ASD/ID	**2.46** 1.07 *41*	**4.12** 1.05 *41*	**2.88** 1.54 *33*	**2.21** 1.34 *34*	**2.27** 1.07 *41*	**4.03** 1.08 *38*
Severe ASD/ID	**2.32** 1.16 *37*	**3.92** 1.14 *40*	**3.33** 1.52 *27*	**2.44** 1.34 *32*	**2.29** 1.23 *38*	**4.03** 1.06 *36*
LI/RI	**2.43** 0.99 *42*	**4.02** 1.11 *41*	**2.70** 1.55 *33*	**2.17** 1.34 *35*	**2.32** 1.13 *41*	**4.03** 1.08 *38*
AAC	**2.38** 1.37 *34*	**3.92** 1.20 *39*	**3.68** 1.41 *25*	**2.36** 1.25 *28*	**2.44** 1.33 *34*	**4.03** 1.04 *35*

Note: 1=always/strongly agree 2=often/agree 3=sometimes/neutral 4=rarely/disagree 5=never/strongly disagree

Table 6. Descriptive data from the six questions regarding optional second language learners

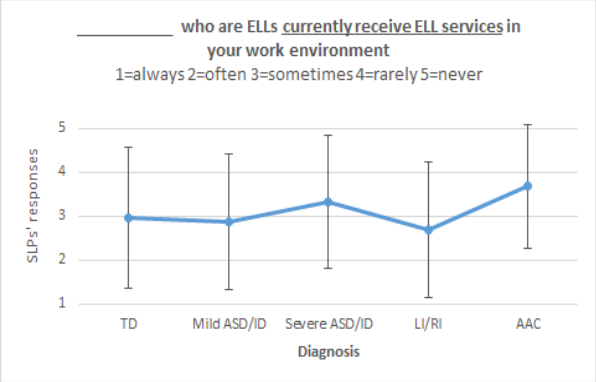
	_____ currently participate in French or other language classes in your work environment	**In your opinion, _____ *should* participate in French or other language classes in your work environment**	**_____ currently participate in French, Mandarin or other immersion programs in your work environment**	**In your opinion, _____ *should* participate in French, Mandarin or other immersion programs in your work environment**	**_____ who opt to learn a second language are assessed and treated in English only in your work environment**	**In your opinion, _____ who opt to learn a second language *should* be assessed and treated in English only in your work environment**
	Mean SD *N*	**Mean** SD *N*	**Mean** SD *N*	**Mean** SD *N*	**Mean** SD *N*	**Mean** SD *N*
TD	**2.55** 1.64 *20*	**2.00** 1.32 *17*	**2.47** 1.55 *17*	**2.13** 1.25 *15*	**2.29** 1.40 *24*	**2.88** 1.57 *24*
Mild ASD/ID	**3.40** 1.54 *20*	**2.44** 1.38 *18*	**3.60** 1.19 *20*	**2.56** 1.29 *18*	**2.20** 1.41 *25*	**2.96** 1.50 *28*
Severe ASD/ID	**4.30** 1.03 *20*	**3.26** 1.48 *19*	**4.44** 1.15 *18*	**3.36** 1.34 *14*	**1.94** 1.39 *18*	**2.89** 1.55 *27*
LI/RI	**3.38** 1.47 *21*	**2.47** 1.39 *19*	**3.50** 1.24 *20*	**2.56** 1.29 *18*	**2.27** 1.43 *26*	**2.93** 1.51 *29*
AAC	**4.28** 1.07 *18*	**3.11** 1.33 *19*	**4.50** 1.10 *16*	**3.36** 1.28 *14*	**1.88** 1.45 *16*	**2.81** 1.52 *26*

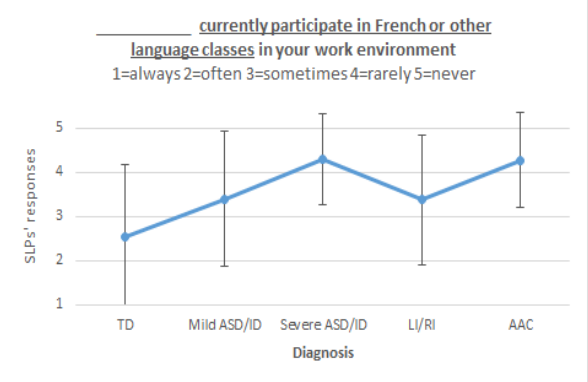
Note: 1=always/strongly agree 2=often/agree 3=sometimes/neutral 4=rarely/disagree 5=never/strongly disagree

Some trends can be observed across questions, allowing us to draw conclusions regarding the first and second research questions about the impacts of diagnosis and of language learning scenario (ELL or optional second language learner) on the SLPs' responses. For seven of the 12 questions diagnostic category did not noticeably affect responses; all responses fell within 0.5 units from one another. For the remaining five questions, the range from the lowest to the highest response was 0.98 or higher, corresponding to at least the distance between any two adjacent responses (e.g. the difference between "always" and "often"). The questions with a range of less than 0.5 were more common in the ELL section; five of the six questions showed little variation across the five diagnostic categories, as opposed to only two of six from the optional second language learner questions. It appears that when it comes to ELLs, diagnosis or lack thereof played less of a role in the SLPs' responses, whereas it had a larger impact on responses concerning optional second language learners.

For the five questions which had ranges of 0.98 or higher between the diagnostic categories, the participants' responses revealed some relatively consistent patterns. Most notably, the answers given relating to children with milder diagnoses (mild ASD/ID and language/reading disability only) never differed by more than 0.18. Similarly, the children with more severe disabilities (severe ASD/ID and AAC) patterned together, with the largest difference between them for any question being 0.35. However, there could be larger differences between "mild" and "severe" groups: the trend indicated that the SLPs think children in the milder categories should and/or do receive more support for bilingual services than their peers with more severe disabilities. Figures 1 and 2 graphically represent examples of this trend from both the ELL and optional second language learner sections.

Figure 1. Provision of ELL services in practice Figure 2. Language class participation in practice





In four of the five questions that showed greater variety between diagnostic categories, the answers relating to TD children generally indicated that they should and do receive more support for bilingualism than all children with disabilities. However, again there was a difference between the ELL and optional second language learning contexts. As mentioned, in the ELL section only one question showed much variation across categories (a range of 0.98). This question asked about the extent to which children are receiving ELL services in practice: for this question the SLPs reported that TD children do not receive ELL services any more frequently than children with mild disabilities (see figure 1).

Analyses: Mismatch between practice and opinion

To test whether the opinions expressed by the SLPs differed from the practices they followed and observed, a series of factorial, repeated measures Analyses of Variance (ANOVAs) were run with the independent variables of diagnostic category (mild, severe) and question type (practice, opinion). All effects were reported as significant at $p < .05$. It was deemed appropriate to carry out this analysis despite the fact that the two question types were measured on different scales (always-never versus strongly agree-strongly disagree) because there is a relationship between the scales that renders the results interpretable. For instance, if a practice question

reveals that a certain mode of treatment occurs “often”, but the opinion question shows that SLPs “disagree” that it is an appropriate mode of treatment, a significant difference in means can be interpreted meaningfully as a conflict between practice and opinion.

The diagnostic categories were collapsed in keeping with the trends observed above: the answers for children with mild ASD/ID and for children with LI/RI were averaged into a “mild” category, and the answers for children with severe ASD/ID and AAC users were averaged into a “severe” category. Additionally, the answers given about TD children were not factored into this analysis. This was done for two reasons: firstly, choices about bilingualism for TD children are qualitatively different than for the children with disabilities. They do not face multiple support needs competing for prioritization. There is no particular expectation that the SLPs’ answers would vary for them based on practice versus opinion, and their inclusion might mask effects and confuse interpretation. The second reason is that SLPs may observe the education of TD children, but they do not work with them directly. TD children were a useful comparison group for examining the impact of diagnostic category, since they allowed us to see how far the responses for a given diagnosis patterned from the norm. However, it was decided not to include answers relating to TD children in a fine-grained analysis of the SLPs’ professional opinions and practices.

In order to maximize data inclusion, some amendments were made to the data set. Specifically, some participants answered a given question for one or more, but not all diagnoses, i.e. they answered ‘Don’t know’, ‘Not applicable’, or left the answers for certain diagnostic categories blank. In order for the data from these participants to be included in analysis, their empty responses were filled with the mean value of other participants’ answers for that question, for that diagnosis. Participants who generated no usable data for a given question (e.g. answered

‘Don’t know’ to every diagnostic category, or left every answer blank) did not have their data imputed in this manner, except in the case that the question was needed for comparison with another question for which they had contributed data. For a given question, for a given diagnosis, the percentage of data needing to be filled in this manner ranged from 0% to 44.8%, with a mean of 12.3%. A complete breakdown of the data imputed in each question can be found in Appendix B. Ns for the amended data are reported in table 7.

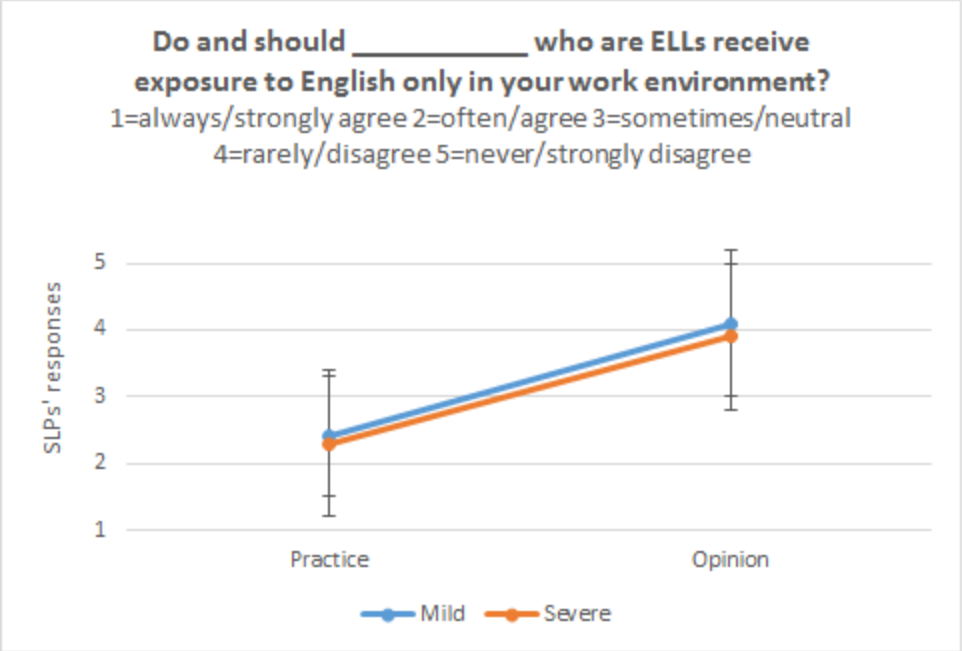
Table 7. Descriptive data for the combined results

	Do and should _____ who are ELLs receive exposure to English only in your work environment (N=42)	**Do and should _____ who are ELLs receive ELL services in your work environment (N=36)**	**Do and should _____ who are ELLs receive assessment and treatment in English only in your work environment (N=41)**	**Do and should _____ participate in French or other language classes in your work environment (N=22)**	**Do and should _____ participate in French, Mandarin, or other immersion programs in your work environment (N=20)**	**Do and should _____ who opt to learn a second language receive assessment and treatment in English only in your work environment (N=29)**
	Mean SD	**Mean** SD	**Mean** SD	**Mean** SD	**Mean** SD	**Mean** SD
Practice/ Mild	**2.44** 0.94	**2.76** 1.42	**2.29** 1.08	**3.34** 1.42	**3.55** 1.18	**2.23** 1.32
Practice/ Severe	**2.33** 1.11	**3.40** 1.21	**2.31** 1.15	**4.23** 0.96	**4.43** 1.02	**1.89** 0.98
Opinion/ Mild	**4.07** 1.05	**2.18** 1.31	**3.99** 1.04	**2.44** 1.21	**2.56** 1.22	**2.95** 1.48
Opinion/ Severe	**3.90** 1.11	**2.34** 1.14	**3.97** 0.98	**3.18** 1.25	**3.43** 1.07	**2.85** 1.45

Note: 1=always/strongly agree 2=often/agree 3=sometimes/neutral 4=rarely/disagree 5=never/strongly disagree

Comparison of practice and opinion regarding English-only exposure for ELLs. Responses on the practice versus opinion question regarding English-only instruction for ELLs were compared with an ANOVA. The results are graphically represented in figure 3, while the descriptive statistics are presented in table 7. There was a significant main effect of practice vs. opinion $F(1,41) = 68.411$, $p < .001$, $\eta_p^2 = .625$; the SLPs reported that ELLs are exposed to English only in their work environments between "sometimes" and "often"; however, they "disagree" that such children should be exposed to English only. The main effect of diagnostic category was non-significant, $F(1,41) = 2.742$, $p = .105$. There was also no significant interaction between diagnostic category and question type $F(1,41) = .285$, $p = .596$.

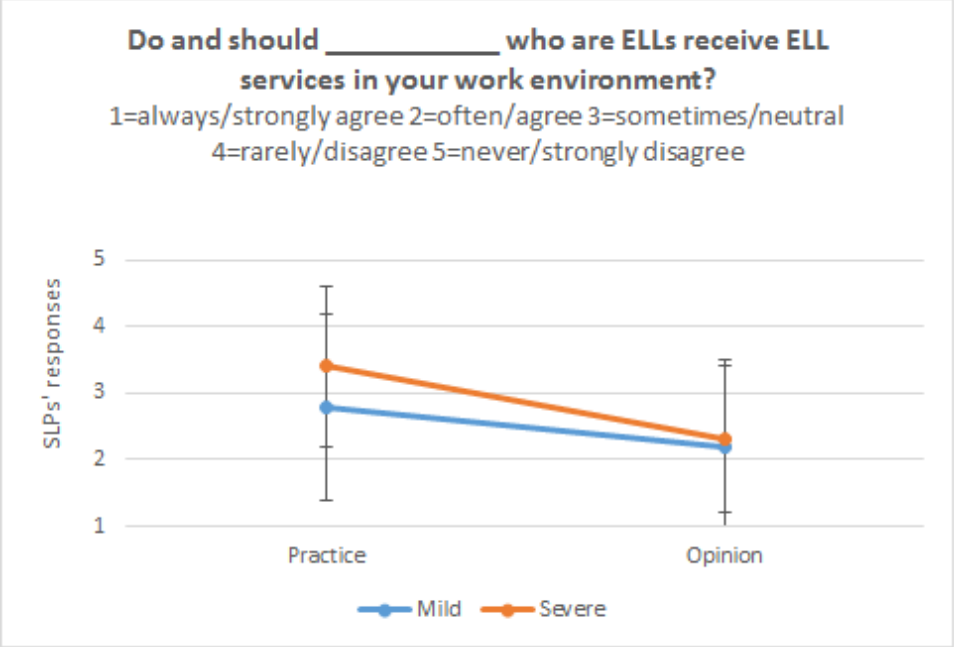
Figure 3. English-only exposure for ELLs



Comparison of practice and opinion for ELLs receiving ELL services. Responses regarding practice and opinion around the provision of ELL services to ELL children with developmental disabilities were compared with an ANOVA. The results are graphically

presented in figure 4, while the descriptive statistics are presented in table 7. There was a significant main effect of diagnostic category F(1,35) = 13.864, p < .01, ηp² = .284. There was also a significant main effect of practice vs. opinion F(1,35) = 11.576, p < .01, ηp² = .249. There was a significant interaction between diagnostic category and practice/opinion F(1,35) = 8.996, p < .01, ηp² = .204 showing that the effect of diagnosis differs across question type. Visual inspection reveals that the difference between diagnoses is wider in practice, and much smaller in opinion.

Figure 4. Provision of ELL services

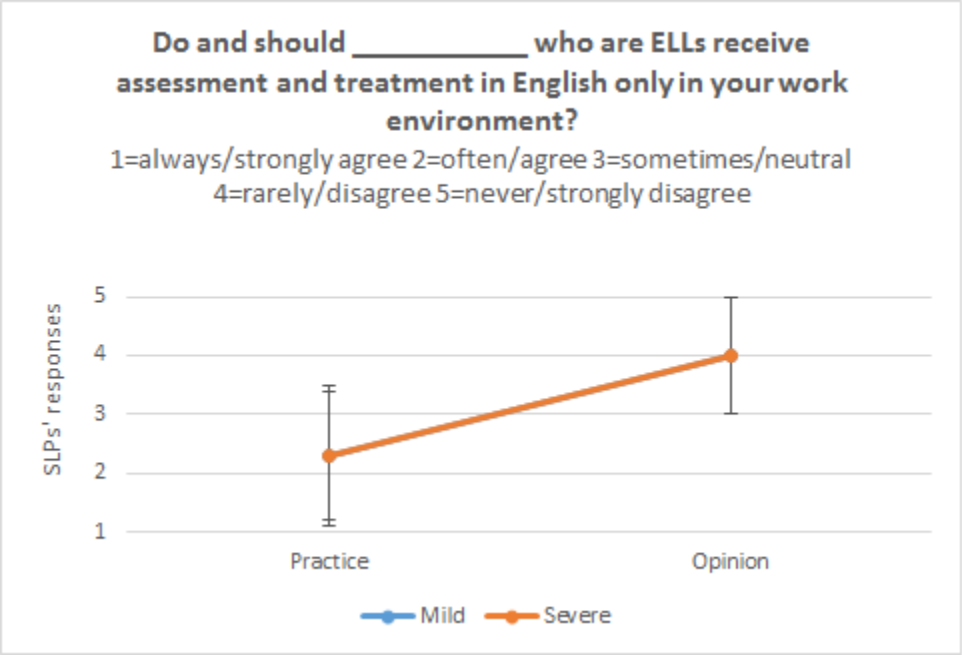


Comparison of practice and opinion for language of assessment and treatment.

Responses regarding current practice and opinion about the language of assessment and treatment for ELLs were compared with an ANOVA. The results are illustrated in figure 5, and the descriptive statistics are presented in table 7. There was a significant main effect of practice vs. opinion $F(1,40) = 122.017$, $p < .001$, $\eta_p^2 = .753$. The SLPs indicated that in practice, children with developmental disabilities who are ELLs are assessed and treated in English only between

"often" and "sometimes". However, the SLPs "disagree" that they should be assessed and treated in English only. There was no significant main effect of diagnostic category $F(1,40) = .003$, $p = .958$. There was no significant interaction between diagnostic category and practice/opinion $F(1,40) = .136$, $p = .715$.

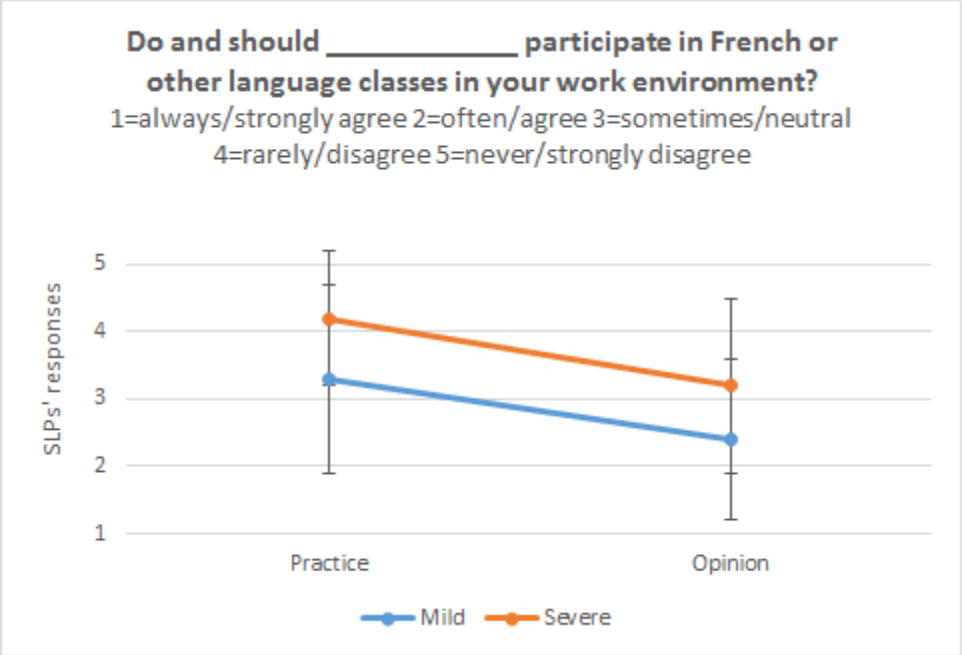
Figure 5. Language of assessment and treatment for ELLs



Comparison of practice and opinion on participation in language classes. Responses that elucidated both practice and opinion concerning the participation of children with developmental disabilities in language classes were analyzed with an ANOVA. The results are illustrated in figure 6, and the descriptive statistics are presented in table 7. There was a significant main effect of diagnostic category $F(1,21) = 24.021$, $p < .001$, $\eta_p^2 = .534$. There was also a significant main effect of practice vs. opinion $F(1,21) = 12.679$, $p < .01$, $\eta_p^2 = .376$; children with more severe disabilities currently participate only "rarely" but the SLPs are "neutral" on this participation. Children with milder disabilities participate "sometimes" but the SLPs "agree" that they should, in general, be participating. In both cases, the SLPs opinions

would support somewhat more participation for these children. There was no significant interaction between diagnostic category and practice/opinion $F(1,21) = .277$, $p = .604$.

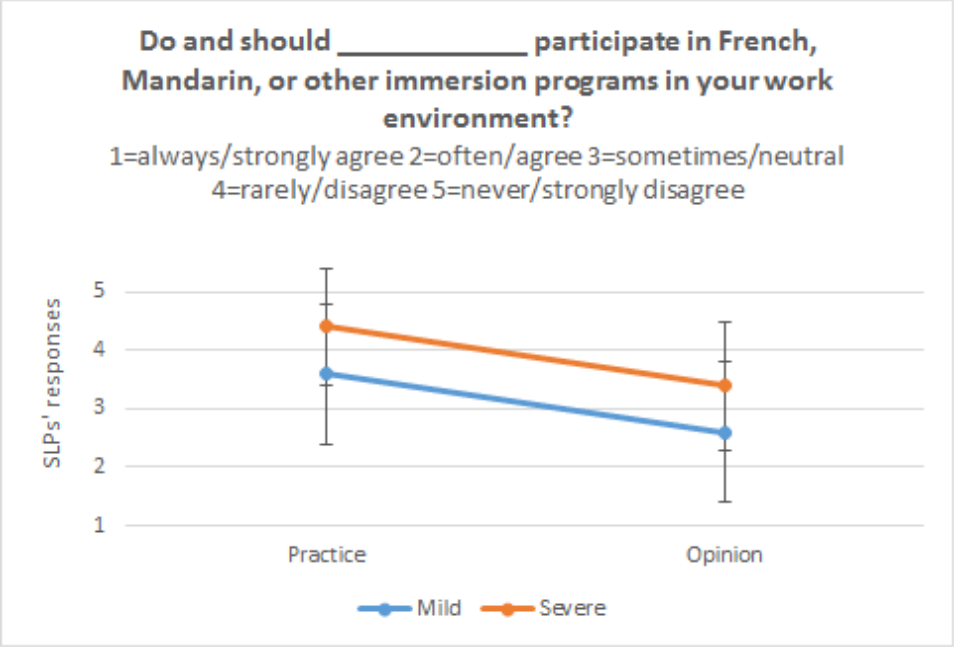
Figure 6. Language class participation



Comparison of practice and opinion on inclusion in immersion programs. An ANOVA was used to analyze responses concerning both practice and opinion on the question of the participation of children with developmental disabilities in immersion classes. The results are illustrated in figure 7. The descriptive statistics giving the SLPs' responses are presented in table 7. There was a significant main effect of diagnostic category $F(1,19) = 33.042$, $p < .001$, $\eta_p^2 = .635$. There was also a significant main effect of practice vs. opinion $F(1,19) = 18.644$, $p < .001$, $\eta_p^2 = .495$; the SLPs reported that children with more severe disabilities are participating in immersion between "rarely" and "never" while the SLPs' opinions state that they fall somewhere between "neutral" and "disagree" on this question. Children with milder disabilities currently participate in immersion programs between "sometimes" and "rarely", but the SLPs opinions are between "agree" and "neutral". In both cases, the SLPs' opinions would support increased

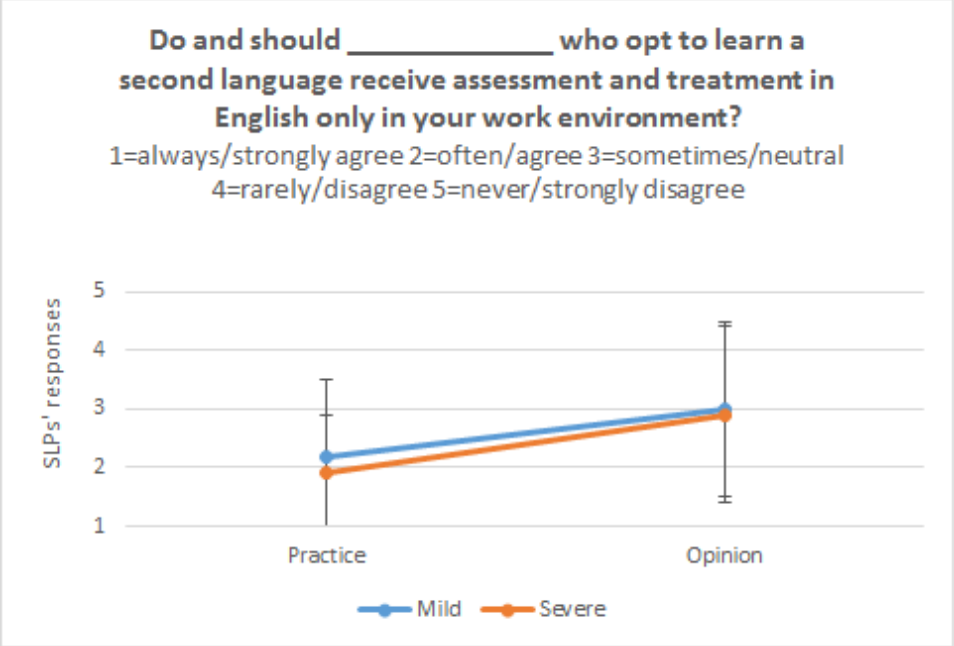
participation. There was no significant interaction between diagnostic category and question type $F(1,19) = .003$, $p = .959$.

Figure 7. Participation in immersion programs



Comparison of practice and opinion on language of assessment and treatment of optional second language learners. An ANOVA was used to analyze responses regarding both practice and opinion on decisions around the language of assessment and treatment for optional second language learners. Figure 8 illustrates the results. The descriptive statistics are presented in table 7. There was a significant main effect of diagnostic category $F(1,28) = 11.277$, $p < .01$, $\eta_p^2 = .287$. There was also a significant main effect of practice vs. opinion $F(1,28) = 19.017$, $p < .001$, $\eta_p^2 = .404$; the SLPs reported that children with disabilities are "often" being assessed and treated in English only but that the SLPs' opinions were "neutral" on this issue. There was no significant interaction between diagnostic category and practice/opinion $F(1,28) = 3.038$, $p = .092$.

Figure 8. Language of assessment and treatment for optional second language learners



Overall, the results of this section indicate that in every case, the practices in the participants' workplaces differ from their opinions on what the practices should be. There is a consistent trend: the participants are of the opinion that more support of bilingualism would be appropriate. They think that ELLs should be exposed to languages other than English more – both in general, and in assessment and treatment – and receive ELL services more frequently. They think that children with developmental disabilities should have somewhat more access to optional second language learning, both through inclusion in language classes and immersion programs. They also think that assessment and treatment of optional second language learners should take place in languages other than English more often than it currently does. Interestingly, there was only one question where diagnostic category interacted with practice/opinion, and this was the question concerning ELL services. The participants reported that in practice, children with more severe disabilities receive ELL services less frequently than their peers with milder disabilities. The SLPs made no such distinction in their opinion regarding how frequently these services should be received.

Discussion

This survey collected data from 42 SLPs in BC to determine current practice as well as professional opinion regarding the bilingual assessment, treatment, and education of children with developmental disabilities. The data revealed some clear trends. All three research questions were answered in the affirmative for several of the survey questions, and interesting patterns of interaction emerged between the variables examined in the study.

Differences and similarities of service for children in different diagnostic categories

Over 12 questions, there were five in which the answers of the SLPs varied according to diagnostic category. It is of note that there were some categories that *never* differed: children with milder disabilities (mild ASD/ID and LI/RI only) patterned together, and children with more severe disabilities (severe ASD/ID and AAC) patterned together. The SLPs appear to distinguish children by fairly large-scale characteristics. The responses to these five questions all concerned language programs offered by the school: ELL services, regular language classes, and immersion programs. SLPs are not involved in the implementation of these programs, but they may advise teachers and families about inclusion and support for children with developmental disabilities in these language learning situations. The SLPs reported that in practice, children with more severe disabilities less frequently receive ELL services, and less frequently participate in language classes and immersion programs. In the SLPs' opinions, it is appropriate that the severity of diagnosis should have some effect on inclusion in optional second language settings, but they did not indicate that severity of diagnosis *should* play any role in decisions regarding ELL services. There was no indication that diagnosis should or does play any role in choosing the language of assessment and treatment.

Differences in service for ELLs as opposed to optional second language learners

Only one of the questions with notable differences between diagnoses concerned ELLs (receiving ELL services in practice). For the other five ELL questions, including all of the questions eliciting the SLPs' professional opinions, answers were similar across all children. This indicates that the SLPs have a firm opinion regarding the language needs of ELLs, and, for the most part, a common practice regardless of diagnosis. This is in keeping with the research; de Houwer (1999) points out that for ELLs, bilingualism is a necessity rather than a choice, while the studies cited in tables 1 and 2 indicate that ELLs with even severe developmental disabilities can become bilingual without detriment to their first language development. Given this, it makes sense for language need to "trump" diagnosis for ELLs. In the questions regarding optional second language learners, the trend was quite different. Four out of the six questions showed differences across diagnostic categories; as mentioned, these were the questions (both practice and opinion) that dealt with participation in language and immersion programs.

Additionally, though there was no visible effect of diagnosis on either practice or opinion when it came to assessment and treatment, there *was* a noticeable effect of language learning scenario on opinion. Namely, the SLPs "disagreed" with the idea that ELL children should be assessed and treated in English only, while they were "neutral" on whether optional second language learners could be assessed and treated in English only. In practice, both groups are "often" assessed and treated in English only.

It appears the SLPs are generally more cautious in encouraging children with any disabilities, especially more severe ones, in optional second language learning scenarios than they are in ELL scenarios. The participants also deem it more important to assess and treat the first language of an ELL than the second language of an optional language learner, which might

be due to a desire to work in the stronger language – Paradis, Genesee and Crago (2011) highlight the importance of supporting the L1 in order to underpin development in the L2. These are not unexpected results; both pragmatic necessity and existence of a research base would tend to prioritize the ELL scenario.

The mismatch between practice and opinion

Every one of the six comparisons of practice and opinion showed significant differences. Though the scales differ, it is still of interest to investigate this clear trend in results. In every case, the SLPs indicated opinions that would promote more exposure to and support of languages other than English for children with developmental disabilities. They think that ELLs should have more opportunities to hear languages other than English in the SLPs' workplace, and feel that they themselves should be assessing and treating in children's home languages more. They think that ELLs should be receiving ELL service more frequently, and that those with more severe disabilities are particularly underserved in this regard. In questions regarding optional language learners, the trend again indicated that the SLPs think that more children with developmental disabilities could have access to optional second language learning opportunities, and be assessed and treated in their second language. However, the participants' opinions were not strong on these questions (hovering around neutral).

In order to explore this gap between SLP opinion and current practice, the responses to the open-ended questions at the end of the survey were consulted. The SLPs were asked to name the most important barriers they saw to the provision of bilingual services to this population, as well as the key changes they would wish to see. Twenty-eight participants completed these questions; they do not represent the views of the whole sample, but they are nonetheless helpful in interpreting the pattern of results.

In terms of barriers, the most commonly cited was a lack of education among both other professionals and parents, meaning that these team members' opinions clashed with those of the SLP. The research on bilingualism in these populations is relatively recent and not very abundant, while the common-sense opinion has long held that bilingualism could be detrimental to language learning (e.g. Thordardottir, 2002, Kohnert et al., 2005, Kay-Raining Bird, Lamond & Holden, 2011). The SLPs in this study seem to favour increased bilingualism, but they reported that they do not always receive support for this view among other professionals and parents. A notable subset of responses identified an institutional bias against including children with disabilities in immersion programs. Correspondingly, one of the most frequently identified changes the SLPs would wish to see was increased education for other professionals and for the general public about the value of L1 support, and the possibility of L2 development in this population.

A related point made by many of the SLPs was that there is a general lack of education on *how* to support bilingualism in children with developmental disabilities. Even if a child's team does value bilingualism, there is limited understanding among language specialists (e.g. French immersion teachers) on how to manage children with disabilities, and a converse lack of ability in special needs workers to support a second language. In the demographic questions, 73.8% of participants reported that they themselves did not feel they had adequate access to continuing education concerning bilingualism. Accordingly, a key change desired by the SLPs was increased research in this field, and better guidelines for professionals (including SLPs) to follow.

Another common theme was lack of funding to provide the volume of services required to support bilingualism in this population. In a population with high needs, educators must of

necessity choose priorities; with limited funding, only the highest priorities can be addressed. It would seem that though the SLPs value bilingualism, they do not currently see it as a realistic goal, given time constraints imposed by insufficient funding. Additionally, the lack of special needs support staff in language programs (e.g. ELL, language classes, immersion) is likely a factor in the reported sub-optimal inclusion in these settings (see Genesee 2007). The SLPs identified increased funding as crucial if the situation is to change.

Another point made by multiple participants was that bilingual services for children with developmental disabilities are simply not available. They identified lack of bilingualism among SLPs and school staff, as well as lack of access to interpreter services as factors. Several participants identified their own monolingualism as a key barrier - 78.6% of the participants used English only in daily life. In a similar vein, they highlighted that resources such as assessments and developmental norms are not available in most languages. Improvements suggested by the SLPs included better access to interpreters, with the opportunity to train them; more bilingual staff overall; for employers to fund the SLPs in learning a second language; and an increase in the availability of developmental norms for various languages.

The SLPs also identified lack of opportunities for the children to use a non-English language as a barrier. They cited families that did not have a same-language community with which to interact, as well as the limited use of school-taught languages outside of the school environment. With limited exposure, they did not see a realistic opportunity for the children to develop their non-English language.

Cautions

It should be noted that the results of this study are based on the participation of a relatively small number of people. Further to this, many respondents did not answer all questions, especially those nearer the end of the survey. The questions about optional second language learners were at the end of the survey, and so the data for these questions are based on the responses of as few as 14 participants. Overall, the results should be interpreted with caution, as they may not be representative of the views held by the majority of SLPs in BC, of which there are slightly over 1000 (College of Speech and Hearing Health Professionals, 2014). In addition, due to the method of dissemination, the survey sample was not random. SLPs self-selected for participation, and those who chose to participate may have been particularly interested in this topic, or particularly up-to-date on the research. However, it is nonetheless of interest to investigate the trends, which give a fairly clear, consistent message.

Conclusion

The survey revealed that diagnosis, language learning scenario, and practice versus opinion all play a role in the views expressed by the SLPs. Diagnosis had little impact on most of the SLPs' answers for ELLs, but made a difference with regards to optional second language learning opportunities. The respondents reported a prioritization of ELL bilingualism over optional second language learning, especially for children with more severe disabilities, which is in keeping with both pragmatic necessity and the relative availability of an evidence-base to guide decisions. The participants also held opinions clearly promoting increased support for both types of bilingualism in all children with developmental disabilities. It would seem that in practice, both ELLs and optional second language learners are receiving less access to non-English languages than the SLPs would like to see. The participants identified a number of reasons for this difference between practice and opinion, most notably including misconceptions among professionals and the general public concerning bilingualism in this population, lack of time and resources to provide adequate support, difficulty accessing appropriate translators or bilingual staff, a lack of non-English assessment materials, and lack of environmental support for the non-English language.

Further research is needed to elucidate the practices and opinions of other professionals such as English as a second language teachers and special education teachers. Such research is currently being undertaken as part of the larger project from which these data were drawn. In addition, there is very little research available on higher level language skills, or the outcomes of children with developmental disabilities who are optional second language learners. Future research should attempt to address this need. The SLPs who participated in this survey also clearly identified a gap in the research: they require developmental norms and assessments for

the various languages spoken by the multicultural population of British Columbia. Bilingualism for children with developmental disabilities is an under-researched and under-serviced area that poses a problem for professionals working with these children; much work is needed provide solutions.

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Appendix A: Survey questions

Section 1: Demographics

1) **Do you work in the Greater Vancouver Area or does your work impact this area?**
   a) Yes
   b) No

2) **How old are you?**
   a) Under 30 years
   b) 30 – 39 years
   c) 40 – 49 years
   d) 50 – 59 years
   e) 60 years or older

3) **What is your gender?**
   a) Male
   b) Female

4) **What is your current job title? (Choose the best description)**
   a) Early Educator
   b) General Education Teacher
   c) Special Education Teacher
   d) English as an Second Language (ESL) Teacher
   e) Educational Assistant / Aide
   f) Principal
   g) Early Interventionist
   h) Speech-Language Pathologist
   i) Psychologist
   j) Occupational Therapist
   k) Physiotherapist
   l) Director
   m) Government Official
   n) Other _____

5) **How many years of experience do you have in this position? (**select years)

6) **What type of agency do you work for? (Select all that apply)**
   a) Daycare
   b) Preschool Centre
   c) Early Intervention Centre
   d) School

e) Assessment & Intervention Centre
f) Health Care / Clinic
g) Community-Based Centre
h) Language Centre
i) Other _____

7) Do you feel you have adequate access to professional development opportunities related to bilingualism? Yes No

8) Do you feel you have adequate access to professional development opportunities related to children and youth with developmental disabilities? Yes No

9) What is the primary language of your workplace?
a) English
b) French
c) Other _____

10) Do you use two or more languages regularly in your daily life? Yes No
If yes: **Which languages do you use regularly?** _____

_____

Section 2: English Language Learners (ELLs)

Instructions: ELLs are children who are learning English as a second or additional language. By this we mean the child speaks one language at home which is not used by the larger community. This child must learn the community or majority language outside the home, perhaps in a daycare, preschool or school.

Example: This may be a child who is a recent immigrant to Vancouver from China and whose family speaks only Chinese at home.

Instructions: Please answer the questions in this section with reference to each of the 5 groups of children.

Example:
Typically developing children who are ELLs are currently exposed to English only in your work environment.
Children with mild autism or a mild intellectual disability who are ELLs are currently exposed to English only in your work environment. …etc.

If you are unsure how to respond at any time, please select the *Do Not Know* or *Not applicable* options.

11) _____ who are ELLs <u>are currently exposed to English only</u> in your work environment.

a.	Typically developing children	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know
b.	Children with mild autism or a mild intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know
c.	Children with severe autism or a severe intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know
d.	Children with a language or reading impairment only	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic device)	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know

Please indicate any other language(s) ELLs are currently exposed to in your work environment.

_____

_____

_____

12) In your opinion, _____ who are ELLs *should* be exposed to English only in your work environment.

a.	Typically developing children	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know
b.	Children with mild autism or a mild intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know
c.	Children with severe autism or a severe intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know
d.	Children with a language or reading impairment only	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic devices)	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know

Please indicate any other language(s) ELLs should be exposed to in your work environment.

_____

_____

13) _____ who are ELLs currently receive ELL services in your work environment.

a.	Typically developing children	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic device)	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable

14) In your opinion, _____ who are ELLs *should* receive ELL services in your work environment.

a.	Typically developing children	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic devices)	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable

15) _____ who are ELLs are assessed and treated in English only in your work environment.

a.	Typically developing children	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic device)	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable

Please indicate any other language(s) that are used when assessing and treating ELLs in your work environment. _____

16) In your opinion, _____ who are ELLs *should* be assessed and treated in [English] only in your work environment.

a.	Typically developing children	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic devices)	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable

Please indicate any other language(s) that should be used when assessing and treating ELLs in your work environment. _____

_____

Section 4: Optional Second Language Learners

Definition: Optional second language learners are children whose family speak only the community majority language at home, but whose family opts for them to learn a second language outside the home.

Example: This may be a child living in Vancouver whose family speaks only English and who is in a French Immersion program or takes a French or other language class at school.

Instructions: Please apply every question in this section to all 5 groups of children by inserting the group in to the blank provided.

Example:

Typically developing children currently participate in French, German or other language classes in your work environment.

Children with mild autism or a mild intellectual disability currently participate in French, German or other language classes in your work environment.

Etc.

If you are unsure how to respond at any time, please select the *Do Not Know* or *Not Applicable* options.

23)_____ currently participate in [French or other language] classes in your work environment.

a.	Typically developing children	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic device)	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable

24) In your opinion, _____ *should* participate in [French or other language] classes in your work environment.

a.	Typically developing children	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic devices)	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable

25) _____ currently participate in [French, Mandarin or other] immersion programs in your work environment.

a.	Typically developing children	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic device)	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable

26) In your opinion, _____ *should* participate in [French, Mandarin or other] immersion programs in your work environment.

a.	Typically developing children	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic devices)	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable

27) _____ who opt to learn a second language <u>are assessed and treated in [English] only</u> in your work environment.

a.	Typically developing children	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic device)	*Always*	Often	Sometimes	Rarely	*Never*	Do Not Know	Not Applicable

Please indicate any other language(s) that are used in assessing and treating children who opt to learn a second language in your work environment. _____

_____

_____

28) In your opinion, _____ who opt to learn a second language *should* be assessed and treated in [English] only in your work environment.

a.	Typically developing children	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
b.	Children with mild autism or a mild intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
c.	Children with severe autism or a severe intellectual disability	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
d.	Children with a language or reading impairment only	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable
e.	Children with any disability who use alternative forms of expressive communication (e.g., picture boards, gestures/signs, electronic devices)	*Strongly Agree*	Agree	Neutral	Disagree	*Strongly Disagree*	Do Not Know	Not Applicable

Please indicate any other language(s) that should be used in assessing and treating children who opt to learn a second language in your work environment. _____

_____

_____

32) What are the three greatest barriers that prevent children with language and/or developmental or intellectual disabilities from becoming bilingual?

_____

_____

_____

_____

33) What are three important changes that you feel should be made to provide greater assistance to children with language and/or developmental or intellectual disabilities in becoming bilingual?

_____

_____

_____

Appendix B: Imputed data for ANOVA analyses

Percentages of missing data imputed for ANOVA analysis

Question Number (see Appendix A)	**TD (%)**	**Mild ASD/ID (%)**	**Severe ASD/ID (%)**	**LI/RI (%)**	**AAC (%)**
11	7.1	2.4	11.9	0	19
12	7.1	2.4	4.8	0	7.1
13	13.9	8.3	25.0	8.3	30.6
14	16.7	5.6	11.1	2.8	22.2
15	12.2	0	7.3	0	17.1
16	17.1	7.3	12.1	7.3	14.6
23	9.1	9.1	9.1	0	18.2
24	22.7	18.2	13.6	13.6	13.6
25	15	0	10	0	20
26	25	10	30	10	30
27	17.2	13.8	37.9	10.3	44.8
28	17.2	3.4	6.9	0	10.3