LANGUAGE AND LITERACY ACHIEVEMENT OF DEAF LEARNERS IN MINORITY-FRENCH SETTINGS

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Abstract

This doctoral study investigated the bilingual spoken language and literacy achievement of four francophone deaf learners living in an English-dominant area of Ontario in Canada. Much bilingual research in the field of Deaf Education prioritizes learner experiences in signed bilingual-bicultural settings and reports of a grade four literacy level continue to plague the field (Allen, 1986; Qi & Mitchell, 2012; Traxler, 2000). The current changed context reflecting the implementation of Universal Newborn Hearing Screening and improved technology indicates language and literacy achievements commensurate with typically-hearing-aged peers. Meanwhile, evidence of spoken language bilingualism among deaf learners is limited, despite the growing number of spoken language bilingual and multilingual deaf learners. In Canada, proficiency in both official languages (i.e., French and English) is an asset and a right for children of francophone parents (see Section 23 of the Canadian Charter of Rights); it is also well-known that bilinguals enjoy many lifelong cognitive and social benefits. There are an increasing number of deaf learners from bilingual/multilingual homes, however, topics related to spoken language bilingualism have only recently started to emerge in the literature. This mixed-methods case study gathered data from four deaf students with various experiences of enrolment in minority French-language schools to highlight their bilingual potential when given early access to technology and appropriate supports while living in an English dominant community. Parent participants (n = 8) and student participants (n = 4) engaged in semi-structured interviews to provide data towards developing a detailed profile of each learner (Seidman, 2006). Parent participants provided additional information by responding to a questionnaire eliciting early intervention experiences and home language and literacy practices. The scores on the CAP and the SIR checklists illuminate each learners' auditory access in both languages. All four student

participants engaged in four separate assessment sessions with two standardized measures (i.e., CELF-5 & WIAT) completed in French and English. Thematic analysis of the interviews alongside the extensive standardized assessment results revealed three major findings: 1) deaf learners have the potential to become balanced bilinguals in language and literacy; 2) in Ontario, there is limited support for spoken language bilingualism at identification; 3) early access to technology paired with early intervention alongside robust home literacy practices may contribute to strong bilingual spoken language and literacy development for deaf learners. The data revealed average to above average achievement on all four standardized assessments corroborating the conversational skills observed during the bilingual interviews and assessment sessions. Findings reveal that there is a need for more evidence-based research to identify the range of potential across the heterogeneous group of deaf learners across minority languages. Given the small participant size, this study serves as a launching point for future research into spoken language bilingualism among deaf learners especially in response to minority language learning or language maintenance.

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When I decided to research the experience of francophone deaf learners, I knew the challenge would be to find willing participants. I am so grateful to the parents of these four deaf learners who saw the potential in my research and volunteered their family time to work with me. To the deaf learners themselves, there are no words to express exactly how honoured I feel to have been welcomed into their worlds. This dissertation captures only a very small fraction of the amazing conversations that we had about bilingualism, deafness, identity, and motivation. Thank you to each of you for your time, your honesty, and your willingness to share your academic achievements and your lived experiences with me.

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Chapter 1: Introduction

Bilingualism has been integral to my experiences as a learner and as an educator. As the daughter of an immigrant mother speaking both Finn and English at home and having completed all my education in a French immersion program, I am personally invested in the positive benefits that knowing more than one language affords. I believe that experiencing the world as a bilingual person has also given me insights into the impact that language has on thought when I draw upon my other languages as I am communicating.

With a strong belief in the benefits of a bilingual education, I began my teaching career in French immersion classrooms after graduating from McGill with a Bachelor of Education. In undertaking this work, I identified with my learners whose home language was typically English and who, within a short time of exposure to the French language in an academic setting, were easily able to use their second language for learning. I remember learning to read in French as a child, and subsequently learning how to read in English. As a classroom teacher, I observed the benefits of the bilingual setting on the development of fluency across languages over time. Personally, nearly every employment opportunity in my life arose either as a direct or an indirect result of my own bilingualism.

My journey into Deaf Education was planned from the start of my teaching career. While pursuing my teaching degree, I developed my assignments on the topic of deaf[1] learners and began realizing that bilingualism remained a focus. The French bilingualism experiences that I brought to my teaching became the backdrop for my experience with teaching in the sign bilingual[2] setting. During the first part of my career as a teacher of the deaf, I delivered a

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[1] The term 'deaf' will be used to refer to any individual identified with a hearing loss, from mild to profound, irrespective of the use of amplification (i.e., individuals with cochlear implants are deaf).

[2] 'Sign bilingual' refers to the use of a natural sign language (e.g., American Sign Language) and a spoken language (e.g., English). Often, the spoken language is primarily accessed through print.

curriculum with the purpose of expanding my deaf students' language foundation in ASL while struggling to also provide access to the language of the print (i.e., English) through a visual representation of English (i.e., some form of signing in English). Most children had limited access to spoken language with the available hearing technologies (e.g., analogue hearing aids) and sign support was necessary for many. Spoken language bilingualism was rarely entertained as an option.

However, only a few years into my career as a teacher of the deaf, the field of deaf education was fundamentally altered by the introduction of newborn hearing screening and improvements in hearing technologies including implantable devices such as cochlear implants. The combination of these two factors allowed for much earlier identification of hearing loss and more timely intervention with hearing technologies that could now provide meaningful access to spoken language even for the children with the most profound hearing losses. Far fewer students were using ASL or any sign support as they were accessing spoken language through cochlear implants or improved digital hearing aids. Age appropriate language development was an outcome clearly linked to this earlier identification and improved amplification, and there was also a positive impact on literacy and academic achievement. As such, in my role as a homevisiting teacher working with newly identified infants and their families, I passionately supported early identification, and modeled strategies for maintaining good language access through technology while stressing the need for meaningful communicative interactions during all waking hours.

Having entered the field just prior to this significant shift afforded me the opportunity to observe firsthand the contrast in achievement between later identified deaf students using limited listening technologies to those early identified learners using cochlear implants or digital hearing

aids. There was a concomitant shift in expectations from delayed language and literacy development to age-appropriate outcomes for many deaf children in this new changed context, including expanded opportunities for spoken language bilingualism that better auditory access now made possible.

This shift emboldened families to focus more confidently on spoken language development and bilingual families (i.e., those who were francophone living in a predominantly English setting) decided to speak French to their deaf children. As a spoken language bilingual teacher of the deaf, I traveled around the province supporting the deaf learners who were growing up in these bilingual homes. From 2005 onward, it also became more common to encounter families whose first language was not English or French and support them in using the listening technologies while also continuing to speak in their home language. Across the province, we discontinued our practice of discouraging heritage language use and moved towards encouraging multilingual families to speak to their deaf child in their home language facilitating a more stable and proficient language model. While my original experience with bilingualism in Deaf Education came through the adoption of a sign bilingual program, by the end of my term as a homevisiting teacher, spoken language bilingualism had become more prevalent, and as such, I chose to focus on spoken language bilingualism and deaf students for my dissertation study.

1.1 Research Questions

For my study I chose to focus on four francophone deaf students growing up in English majority settings and attending French-language schools. These are deaf children who primarily speak French at home and at school but live in an English dominant environment. The goals of this study included examining language and literacy achievement in both languages by

comparing performance to age-based norms in French and English, as well as extrapolating demographic and other variables that may have impacted outcomes (e.g., gender, unilateral/bilateral hearing loss, personal amplification, level of auditory functioning, grade placement, additional disabilities, home language, home literacy practices). As there are ongoing concerns about whether bilingual deaf learners can sufficiently access two languages and acquire age-appropriate competence in both - the foundation needed to support biliteracy development, I wanted to address this issue in my research. Even with high performance tools available in the current context, deaf learners may still encounter challenges in accessing spoken language (e.g., incidental language learning[3] is harder with the limitations of listening technology).

A further goal of the study was to explore the decision-making process of the parents regarding their choice for a francophone minority language education in Ontario, Canada, and to examine the perspectives of the parents and the students themselves of their educational experiences in a minority language setting. These findings may have implications for identifying areas of improvement in educational support for deaf learners.

The questions that guided this investigation are:

(1) How does the language and literacy achievement of school-aged deaf learners in French language minority schools compare to age-based norms in French and English?,

2) What are the demographic characteristics of the deaf students (i.e., gender, unilateral/bilateral hearing loss, personal amplification, level of auditory functioning, grade placement, additional disabilities, home language, home literacy practices) enrolled in French minority schools?

3) How do deaf students and their parents describe their experiences of education in a bilingual environment?

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[3] Children with typically developing listening skills learn words, phrases, jokes, idioms, language in context, etc. by overhearing conversations leading to incidental language learning.

4) How do parents of deaf students describe their decision-making process around enrolment in minority language education?

A mixed methods multiple case study design has been implemented in which both quantitative and qualitative data has been collected to address the research questions most comprehensively. The data collection included: 1) standardized language and literacy assessments and rating scales completed in both English and French and rating scales, 2) written questionnaires and interviews with both the parents and the deaf students, and 3) writing samples from the deaf students in both English and French.

1.2 Significance of the Study

For over 100 years, in communities where English is the majority language, francophone minority schools organized by French-language school boards have existed to educate Franco-Canadian children and provide a linguistic hub for francophone families. It is also the case that francophones have a constitutional right to French-language education for their children, and the government has the responsibility to provide these services (Government of Canada, 1999; Lexum Incorporated, 2001; Rocque, 2020). However, historically, parents were counseled to have their deaf child educated in English language schools, even if they were from francophone families. But given that spoken language bilingualism is now possible, because of improved access, there is a growing demand that deaf students be afforded an equal opportunity to enrol in these programs.

In the current context, government employment in Canada requires that a person have oral and written language proficiency in both official languages. The deaf learners who were consistently discouraged from participating in bilingual programming would never qualify for positions ahead of a bilingual Canadian. With the families of deaf learners consistently being

discouraged from using more than one spoken language – heritage language or official language, and the focus on sign bilingualism as the only form of bilingualism expected, there would be an inequality for deaf people in the Canadian job market.

That said, it has become increasingly common to find deaf students in bilingual educational environments such as: Core French programs where 30-45 minutes of French language instruction is offered daily to all students in mainstream English school settings, various models of French immersion programs where students acquire French-as-a-second language through instruction in some or all academic subjects, and French-language minority schools where francophone students are instructed exclusively in the French language apart from the daily Core English classes. Yet very little is known about the language and literacy achievement of deaf students in these educational settings, including those from francophone minority communities who are attending French-language minority schools. This last cohort will be the focus of this proposed study.

Spoken language bilingualism is a relatively new area of research in the education of deaf learners. To date, research in the field has focused on signed-spoken language bilingualism where deaf learners have acquired the second language primarily through print, and there have been limited investigations of deaf students acquiring two spoken languages. Further to that and to the best of my knowledge, no one has carried out a study with deaf students enrolled in French-language minority school, therefore, I believe this study to be among the first with this focus.

It is my hope that the findings from this study will usher in discussions resulting in a shift in professional practice. Parents expect that early intervention professionals will provide recommendations with an evidence-base as they make decisions about home language and

bilingual educational programming. In this way, findings from this study could further inform both policy and practice, as well as signalling the ongoing need for more research in this area.

1.3 Overview of the Chapters

Chapter One provides a summary of the study including the research questions and significance of the work.

Chapter Two presents the literature review that focusses on several aspects of bilingualism with an emphasis on deaf education, spoken and/or signed language bilingualism and the relationship to literacy achievement.

Chapter Three provides a description of the research methodology - a mixed method multiple case study design with a purposive sampling technique including details about the participants and setting, measures used and procedures for data collection.

Chapter Four presents the findings from the four participants including their scores on the standardized measures administered, the writing samples, closed and open-ended responses to the questionnaires, and comments from the interviews with the parents and the students.

Chapter Five provides a summary and analysis of the findings using the research questions as the guiding framework.

Chapter Six focusses on the implications of the study for future research, for policy development, for professional practice, and most importantly, for how this information impacts deaf children, deaf young people, and their families.

Chapter 2: Literature Review

To provide background for this investigation and research questions as stated in Chapter One, it would be important to first review what is known about bilingual education in the context of hearing learners, specifically with respect to language and literacy development. In the Canadian context, there is an ample body of research, examining the benefits of French-English bilingualism (Allen, 2004; Cummins, 1998; Genesee & Jared, 2008; Lambert, 1978; MacIntyre et al., 2011; Roy, 2015). The literature contains investigations on the development of French language skills in majority English settings, the policies that impact students enrolled or wishing to enrol in the programs, the history of inclusion in bilingual educational settings, and the educational challenges regarding language and literacy development of bilingual learners.

In addition, it would be important to review the literature with respect to bilingual education and deaf learners. Historically, research in deaf education has focussed on signed-spoken language bilingualism (i.e., American Sign Language and English in the Canadian context). However, spoken language bilingualism is now possible for increasing numbers of deaf students, and it would be central to this study to determine the extent to which this cohort is represented in the literature.

2.1 Bilingual Education in the Canadian Context

While Canada in 2025 can be described as a highly multilingual country, French and English are the only official languages and promoting bilingualism in these languages is recognized as an educational goal. French immersion programming, which began experimentally in 1965 by an anglophone parent group in St. Lambert, Quebec, is a response to a commitment by the provinces to educate their students in both official languages. For francophone children, Minority French Schools are a response to Section 23 of the Canadian Charter of Rights (Lexum

Incorporated, 2001). French immersion and French Minority Schools are currently an alternative to the mandatory 120 hours of core French programming per year offered from grades 4 to 12 under a variety of models in every province.

All provinces, apart from Quebec and New Brunswick, are primarily anglophone environments. Historically French language minority schools did not always enjoy support across the country, but after many judicial battles, fought on the basis of Section 23 of the Canadian Charter of Rights, hundreds of French Language School Boards were established across the country throughout the 1990's (Rocque, 2020). The Supreme Court of Canada case information states:

> The general purpose of section 23 is to preserve and promote the two official languages of Canada and their respective cultures, by ensuring that each language flourishes, as far as possible, in provinces where it is not spoken by the majority of the population. The section aims at achieving this goal by granting minority language education rights to minority language parents throughout Canada. (Lexum Incorporated, 2001; Government of Canada, 1999)

Currently, francophone families living in any province other than Quebec can facilitate the maintainance of their language and culture by enrolling their children in French minority schools. But the reality is that most children who attend French minority schools spend their time outside of the school settings in an environment dominated by spoken English.

According to the Canadian Council on Learning Report (2007), there are economic, cognitive, and cultural benefits to bilingualism Economically, bilinguals tend to earn more money, which supports economic growth. Cognitively, the research evidence shows that bilingualism supports advanced executive functioning and problem-solving skills. Culturally,

interest and empathy towards the others' culture is nurtured through bilingualism (Cummins, 1998; MacIntyre et al., 2011; Roy, 2015). Though challenges remain, bilingual education has been well established as an option for those living in the urban centres of Canada for the past 30 to 40 years.

In Canada, all federal agencies work in both French and English, therefore, the significant advantages to being able to communicate in both languages are well established. In addition to the obvious benefits of bilingualism, executive functioning, phonological processing, language, and reading are all positively influenced by learning a second language early (Genesee, 2007; Genesee, 2015; Marian & Shook, 2012). On this basis, it is argued that Canada should want its students to receive these benefits (Report of the French Second Language Task Force, 2012). In support of this mandate, it is the role of the French Language Services Commissioner to advise and make recommendations in line with the French Language Services Act (Ontario, 2019; Ontario, 2025).

It is also reported that the success of French bilingual programs (i.e., Core French, French immersion) is measured in terms of a high degree of second language proficiency occurring alongside the continued growth of the first language (Report of the French Second Language Task Force, 2012). In 1964, Lambert coined the term *additive bilingualism*, which describes the retention of this second language beyond the corridors of the school without negative consequences to the first language (Manitoba, 2007). This stands in contrast to subtractive bilingualism in which students are not supported in maintaining their first language as they acquire the dominant language of instruction. The goals for students who participate in bilingual or French programming in majority English settings include cognitive benefits, native-like oral language abilities, and retention of the language to the degree that they can conduct both

personal and professional business worldwide in both official languages well beyond their time in the program (Ontario Ministry of Education, 2013).

2.2 Evaluating Program Success

There have been suggestions that a measure of program success is that high school graduates acquire native-like oral language abilities combined with evidence of capabilities in conducting daily business bilingually (Harley et al., 1986; Ontario Ministry of Education, 2013). The Canadian Council on Learning (2007) describes this type of evaluation of programming as an autopsy rather than a diagnosis. To diagnose, students need to be assessed with standardized assessments while participating in the program. Despite ongoing research on French Immersion programs in the 1980s (Genesee, 1987; Harley & Swain, 1984; Jackson & Duncan, 1985; Shapson & Day, 1982), some of the first evaluative statistics available were the results of Ontario's Education Quality and Accountability Office (EQAO) tests that began in 1997. In 2004-2005, grade 3 EQAO literacy test results showed that students in French immersion who had received instruction in English literacy for a percentage of their day performed only slightly below the students in the monolingual English programs of the same socio-economic backgrounds (Dicks, 2008).

Across Canada, provinces have created their own French immersion curriculum and methods of assessment. Most commonly, robust curricula containing rubrics are the only method of evaluation for program success. Yet, some international second language learning tools have proven useful in evaluating the effectiveness of Canadian French immersion programs. In a report by Statistics Canada called Reading Achievement of Students in French-immersion Programs (2004), the Programme for International Student Assessment's (PISA) computer-based reading assessment results placed 15-year-old French immersion students ahead of their same-

aged English-school peers in reading achievement in both French and English (Canadian Council on Learning, 2007).

However, in the 2000 PISA report, it was noted that 15-year-old francophone students living outside of Quebec performed more poorly than their bilingual counterparts from French immersion settings or monolingual peers in both reading and writing (Canadian Language and Literacy Research Network, 2009). While the European Language Portfolio, a learner self-assessment, can provide insights for individual learners who are curious about their own measure of language proficiency, this measure this does not afford a means for programs to evaluate success (Report on the French Second Language Task Force, 2012).

Even though approximately 300,000 Canadians have been educated in the French immersion system, longitudinal studies using standardized assessments to examine the literacy skills of students in bilingual programming are relatively scarce. In part, this may be because there are questions as to which standardized tests are appropriate to use with this population. French literacy tests that are normed on francophone students may not provide a fair assessment for anglophone or allophone[4] students educated in French immersion classrooms or learners enrolled in minority French schools where the community and home language is the majority English language (Canadian Language and Literacy Research Network, 2009). Despite these challenges, researchers have documented positive literacy development of bilingual learners.

In a longitudinal investigation, Reeder et al. (1999) studied the impact of providing different percentages of French instruction during the intermediate school years. Participants were students enrolled in grades four and five in an early French immersion program located in a predominantly middle to upper-middle class community in Vancouver. Due to instructional

[4] In Canada, allophone is defined as someone whose first language is not French or English.

design adjustments introduced in the school prior to the onset of the study, convenience sampling was employed in a quasi-experimental investigation. As such, French was the exclusive language of instruction for all participants through grade three, whereas the ratio of French to English instruction varied between the two cohorts during the intermediate school years. In this study, students in grade four were considered treatment participants and received the newly initiated 80% French/20% English instruction (80/20), while students in grade five continued to receive the 50% French/50% English model (50/50) that had traditionally been offered at the school. As part of the study design, teachers' grade level assignments remained constant over the three-year study to mitigate a potential teacher effect.

The 81 grade four (n = 45) and grade five (n = 36) students enrolled in the school during the first year of the study served as participants. While minimal attrition occurred across the three years, only students with complete data were included in the final analyses. Standardized assessments of reading comprehension, including the *Tests de Lecture* (Barik et al., 1979) for French and the *Gates MacGinitie Reading Tests* Second Canadian edition (MacGinitie & MacGinitie, 1992) for English, along with researcher-developed measures of narrative and descriptive writing in French and English, were administered on an annual basis.

Findings of this investigation revealed that while there was an early advantage favoring the 80/20 cohort for reading comprehension in both languages, the initial benefit did not maintain over time. In fact, the scores reported for both the 80/20 and 50/50 cohorts for both French and English reading were reportedly above the mean at all three time points. Furthermore, results suggested that the two cohorts performed equally well on the measures of narrative and descriptive writing in French over the three-year study period, and a similar pattern of performance also emerged on the measures examining the two genres of writing in English.

Further reviews of the available literature indicate that most students in early French immersion become biliterate without direct English instruction independent of their first language, indicating significant cross-linguistic relationships (Au-Yeung et al., 2014; D'Angelo & Chen, 2016; Mady, 2015). When compared to their monolingual peers, students enrolled in Early French immersion showed equally successful outcomes in both French and English literacy tasks (Au-Yeung et al., 2014). That said, it has been suggested that students enrolled in French immersion do not represent the general population because the majority come from middle and upper-middle class families (Mady & Arnett, 2009; Wise, 2011), and as such, they are not a good measuring stick for the development of biliteracy across the general population (Canadian Language and Literacy Research Network, 2009).

In a Policy Brief for the Canadian Research Institute for Social Policy, Willms (2008) writes that there are five dimensions to social segregation in the French immersion school system: special needs, social class, gender, ability and behaviour. However, not everyone agrees that streaming students, defined as the practice of admitting on the basis of perceived academic ability or potential, is responsible for the good outcomes in Early French immersion. Dicks (2008) suggests that there is no evidence to support the claims that these five dimensions have impacted the PISA outcomes, and rather that bilingual education should be considered successful for reasons related to students' capacity to learn languages and good pedagogy.

A longitudinal study of 79 students by Savage et al. (2016) focused on the cross-linguistic transfer through neuro-cognitive interactions that occur in bilingual students while learning to read and write. All students were from monolingual English backgrounds but lived in suburbs outside of Montreal where they are more likely to have exposure to French, than in comparable urban centers such as areas of southern Ontario. Using data spanning five grades, the

group examined whether any measures of language and literacy skills in either L1 or L2 could provide predictions concerning the students' later writing skills in either language.

The study revealed that French and English linguistic comprehension measured in grade one predicts writing performance in both L1 and L2 five years later. The authors proposed that educators could use information about a students' ability to formulate sentences in their L1 to predict future L2 writing skills. As such, this was the first investigation to demonstrate cross-linguistic transfer where reading and writing skills in both the first and second language support overall literacy skills. This cross-linguistic transfer finding is important because it suggests that developing bilingual students who demonstrate difficulties in general language development can be identified early and receive literacy intervention. Early literacy intervention in bilingual schools may be used as a preventative measure for supporting both oral language, and reading and writing development across L1 and L2.

Other research on cross-linguistic transfer suggests that students who understand skills in one language transfer reading skills to their second and third languages (Deacon et al., 2006; Lam & Chen, 2017). Jared et al., (2011) found evidence that general literacy skills such as phonological awareness, orthographic knowledge, rapid automatized naming, and grammatical abilities in English predicted reading ability in French. This transfer of preschool literacy skills from the first language to the second language in their study, suggests that measures of L1 skills upon school entry could be used as early identification measures of reading difficulties in both first and second languages.

In their study of grade four students, D'Angelo and Chen (2016) sought to examine the array of difficulties related to reading comprehension specifically with poor comprehenders when learning two languages simultaneously. The authors identified three groups of participants,

each from both bilingual and monolingual language groups, categorizing them as poor, average, and good comprehenders of language. The bilingual students were assessed using the *Gates-MacGinitie Reading Comprehension Test, Second Edition (GMRT-II)* (MacGinitie & MacGinitie, 1992) Level D4 – D5/6, Form 3 in English and a translated version of the same test, Form 4, administered in the same manner in French.

The 83 grade four students were enrolled in Early French Immersion (EFI) and came from a metropolitan area in Ontario. The participants were divided into equal groups corresponding with the categories of comprehenders (n = 14 poor, n = 14 average, n = 14 good). Findings of this investigation revealed that while there was no significant difference between the three groups with respect to pre-requisite decoding capabilities, finding from the assessment of reading comprehension suggest a possible, underlying language difficulty. In fact, when compared to monolingual learners, the results indicated that language comprehension difficulties likely predict poor comprehenders across languages. Furthermore, the results suggested that instructional strategies and interventions for poor comprehenders could be supportive of these students' reading comprehension when provided simultaneously in either developing language (D'Angelo & Chen, 2016).

In a study of grade four students (N=206) in simultaneous bilingual educational settings, Savage and Pace (2019) examined reading abilities and reading comprehension at two timepoints during the academic year using the *Group Reading Assessment and Diagnostic Evaluation* (GRADE) to determine whether there were patterns to predict longitudinal reading comprehension. They also sought to examine the variances in home languages and how this might influence cross-linguistic transfer of skills. Findings suggest that there were significant possibilities for predicting reading comprehension with French and English listening

comprehension predicting reading comprehension in both languages. That said, students' first language did influence longitudinal reading comprehension; those from FL1 backgrounds (n=36) showed advantage only on French measures and EL1 students (n=139) showed a corresponding advantage on English measures. The study did not analyze students with linguistic backgrounds other than French or English as the sample was too small. These results support the proposition that quantity and quality of linguistic input affects reading outcomes of students in bilingual programming.

Generally, the research shows that most students in early French immersion become biliterate without direct English instruction (i.e., students in early French immersion do not receive any instruction in English until grade 2 or grade 3 across school boards), suggesting significant cross-linguistic relationships (Au-Yeung et al., 2014; Jared et al., 2011; Savage et al., 2016; Savage & Pace, 2019). Savage and colleagues (2016) note, "It has consistently been found that students attain the same or higher levels of L1 proficiency and academic achievement as L1 only programs and, at the same time, acquire higher levels of functional proficiency in the L2" (p. 2). In a review of the literature, Genesee (2004) proposed that despite the range of programming, home language, social context and community goals for bilingual education, students enrolled in bilingual programming are achieving linguistic parity in the dominant language by high school graduation. While there remain some areas of challenge for second language learners (i.e., competence in verb tense, pronouns and prepositions) (see Genesee, 2004 for a discussion), bilingualism may be seen as a desirable goal for all students.

2.3 Bilingual Education for Students with Exceptionalities

Since the emergence of French immersion in the late 1970s, bilingual education has often been seen as an educational option only for the linguistically elite. With some educational

decision makers measuring program success only if a high degree of second language proficiency occurs alongside the continued growth of the first language (Report of the French Second Language Task Force, 2012), children with additional learning needs have generally been discouraged from enrolling in the French immersion system or French minority schools (Bruck, 1978; Trites, 1976). It was believed that students who might potentially struggle with literacy development in the first language would struggle similarly in the second language, and that reading and writing achievement in L1 would be compromised. However, with admission requirements widening (Landry et al., 2010), more learners with additional learning exceptionalities are being included in bilingual programming, despite a limited evidence-base to support bilingual education for this group of students (Arnett & Mady, 2018;Ware et al., 2015).

In 2017 Mady & Muhling completed a systematic review of the literature over the previous 15 years of students with special education needs in French Second Language programming. Search terms included Core French, intensive French, and French immersion including the key words special education, gifted, learning disabilities and exceptionalities. Organizing the findings according to the three FSL programs across Canada, there were 22 peer-reviewed articles related to French immersion. The authors noted that more reports were written regarding students with special education needs (SSEN) who are attending French immersion programs than Core French and intensive French. They reported several strategies that have been highlighted for use with SSEN in French immersion (i.e., in-class peer support, peer tutoring, use of technology, vocabulary instruction) that could support these students in developing bilingualism. The authors suggest that the available research indicates that early intervention, perhaps even in English, in conjunction with these identified strategies, could increase learning

possibilities for becoming bilingual for SSEN which in turn could provide benefits such as improved self-esteem, motivation and confidence.

The academic outcomes of majority English students with special education needs enrolled in French immersion programs in a large school board in Eastern Ontario were examined by Kay-Raining-Bird and colleagues (2021). The study examined results from the provincially mandated grade 3 EQAO results in English for literacy and mathematics of students with autism, behavioural problems, hearing loss, specific language impairment, learning disabilities and mild intellectual disability, including students who had IEPs but were not formally identified. Findings suggested that with accommodations, over two-thirds of the immersion students met the required expectations of the province in literacy, but just under half of the students met the expectations in math. The authors also tested a small subsample of students in English and French language and literacy. They found that “few fell below the normative mean on the English language and reading subtest” (p. 216), and from the same group, the average SSEN scored at or above a 6 ½ year old on French word reading test which indicated competence in French even though it was several years below their grade level. Paradis et al. (2021) propose that despite the challenges in educational research on special populations (i.e., heterogeneousness of the population, small sample size), the results of this study and other similar studies suggest that SSEN “can succeed in dual language immersion programs” (p. 272).

Wise & Chen (2015) and Wise et al. (2015) argued that students who struggle to read in the second language would also struggle in monolingual programming. In monolingual programming, these students would receive early literacy intervention to scaffold their learning of fundamental code-related skills. For struggling readers in French language programming, the authors suggest that participation in early literacy intervention could be provided to support

biliteracy development, and this would allow for the possibility of improved reading and writing results in both languages.

Similarly, Lee & Chen (2019) suggest that rather than moving struggling readers out of bilingual programming, students' reading skills should be supported to the point of proficiency. In their study they investigated young emergent bilinguals enrolled in Early French immersion in a large metropolis in southern Ontario where English is the majority language. Students received literacy instruction in French beginning in grade 1 until grade 4. Generally, interactions between word reading fluency and vocabulary plateau around grade 4, but for emergent bilinguals, Lee and Chen found that it wasn't until grade three that there was an interaction between word reading fluency and vocabulary that influenced reading comprehension in both French and English. They argued that it was the longer exposure to the bilingual setting that allowed students to achieve better reading outcomes, specifically in reading comprehension.

Of late, more focus has been on bilingualism and learners with Specific Language Impairment (SLI). With respect to students from other minority language backgrounds (i.e., not English or French) with SLI, Rice (2016) argues that comparison studies of emergent sequential bilingual children and children with SLI are important to recognize the variations in individual language acquisition. Rice does not discourage bilingualism as a goal for learners with SLI from bilingual or bi-dialectal homes but warns that sequential English language acquisition will cause a delay, as it does in sequential bilingual learners in general. However, she also cautions that this delay should not be confused with SLI. As suggested by Lee & Chen (2019), increased quantity and quality of exposure favours a learner's growth in bilingualism given their own individual linguistic capabilities. For emergent bilingual students with SLI, and early struggling readers,

bilingual education should remain an option and should be supported through appropriate intervention.

With more and more children from varied backgrounds being enrolled in French bilingual programming, it would be important to establish an evidence-base to document the language and literacy achievement of this new cohort. Nearly twenty years of research reflects the changed context that include bilingual learners who may have additional learning needs, with a recognition that these learners warrant support through appropriate intervention, as is the case in monolingual educational settings (Genesee, 2004, 2007; Kay Raining-Bird et al., 2016; Ware et al., 2015). As Genesee (2004) contends:

> Students who speak a societally dominant language (or a non-standard variety of such a language) and have learner or background characteristics that put them at-risk for academic difficulty or failure can achieve the same levels of L1 development and academic achievement in bilingual programs as comparable at-risk students in L1 programs. At-risk students in bilingual education generally perform less well than students in the same program who are not at-risk, but their progress is not differentially impeded in comparison to comparable at-risk students in L1 programs. At the same time, research has shown that at-risk students can benefit from bilingual education by acquiring advanced levels of functional L2 proficiency (p. 21).

2.4 Bilingual Education and Deaf Students

Over the last three decades two narratives have characterized the discourse on bilingualism in deaf education - bilingualism in a signed and spoken language (e.g., American Sign Language (ASL) and English) or in two spoken languages (e.g., French and English). Signed-spoken language bilingualism has tended to dominate the discourse with bilingual-

bicultural models of deaf education being implemented in schools for the deaf since the 1990s (Swanwick & Gregory, 2007). But with increasing opportunities for deaf children to meaningfully access spoken language, learning two spoken languages and developing as spoken language bilinguals is becoming more commonplace in the current context.

2.5 Signed-Spoken Language Bilingualism

Signed-spoken language bilingualism refers to developing competency in two languages where one language is signed and the other is spoken (i.e., bilingualism across modalities) (Bialystok, 2006; Mayer, 2017; Mayer & Akamatsu, 1999). In the Canadian context this would typically be bilingualism in ASL and English or La langue des signes québécoise (LSQ) and French where ASL or LSQ are seen as the natural languages of the culturally Deaf communities and English or French are the languages of the majority hearing communities (Bill 213, 2007). Bilingualism is also possible in two natural signed languages, for example, students attend a school where ASL is the language of instruction, but the home language is Hispanic Signed Language (HSL) or La langue des signes québécoise (LSQ) (Pizzo & Chilvers, 2016).

The focus of educational studies on bilingualism and deaf students has generally been on Bilingual/Bicultural or Sign Bilingual programs, primarily at schools for the deaf (i.e., a minority within a majority). Since Stokoe's groundbreaking research leading to the recognition of ASL as a bonafide language (Stokoe, 1960/2005), the Bilingual-Bicultural (Bi-Bi) philosophy of educating deaf students has gained traction in schools for the deaf worldwide. In a sign bilingual model of education, it is posited that deaf students can transfer their knowledge in L1 (e.g., ASL) to learning to read and write in the second language (e.g. English) (Israelite et al., 1992; see Mayer & Wells, 1996 for a discussion). In practice, the Bi-Bi approach is described as "simultaneously teaching deaf people ASL and written English while integrating the deaf and

hearing cultures to create a bicultural environment" (Bob Rumball Center for the Deaf, 1995, p.14).

> This model uses ASL as the language of dialogue and uses both ASL and English as the language of instruction and of study. As a result, ASL proficiency creates teaching and learning experiences that increase the academic achievement of every student. This model not only has benefits for the student within the classroom, but also extends to their life outside of the school environment. The benefits of this model are evidenced not only in the classroom, but also extends to community connections by developing the students' skills to become life-long learners. (Ontario Ministry of Education - Provincial and Demonstration Schools Branch, 2019, Ernest C. Drury, Bilingual-Bicultural Biliteracy, paragraph 2)

The theoretical basis for this proposition is the linguistic interdependence model (Cummins, 1979a; 1989; 1991), in which it is argued that "the cognitive/academic aspects of L1 and L2 are interdependent and that the development of proficiency in L2 is partially a function of the level of L1 proficiency at the time when intensive exposure to L2 is begun" (Cummins, 1979a, p.3). However, as Cummins notes, "these relationships do not exist in an affective vacuum and there are several factors which might reduce the relationships between L1 and L2" (p. 3). As well, there is evidence that interdependence is more robust among languages that are more similar in terms of vocabulary and orthographies (e.g., English and French) (Cummins & Danesi, 1990), and that transfer is more tenuous between languages that are less similar (Cummins et al., 1984; Genesee, 1979) raising questions as to the nature of transfer between languages as disparate as one that is signed and one that is spoken.

The jury is still out on whether deaf children benefit from this educational model if the measure of success is learning to read and write. One of the fundamental challenges is that more than 95% of deaf children have hearing parents (CDC, 2018; Mitchell & Karchmer, 2004) where they would not be naturally exposed to a signed language (e.g., ASL) from birth in the home. Even when parents make a commitment to learn to sign, this is challenging, as it is very difficult to achieve a level of proficiency in the language to allow for meaningful interaction in the critical early years. This means that very few deaf children, except for those who have Deaf parents who sign, enter school with age-appropriate proficiency in ASL. In addition, questions have been raised about the nature and viability of the transfer from ASL to English in terms of literacy development given the two different modalities and the fact that ASL does not have a widely recognized written form (see Mayer & Wells, 1996 for a discussion).

That said, Hrastinski and Wilbur (2016) contend that it is ASL proficiency that enabled some students to achieve grade level reading performance on nationally standardized tests. The participants in their study were from a small sample (n=85) from grades 6 to 11 at a single school for the deaf which was an "exemplary model of ASL-English bilingual education philosophy" (p. 167) and where most parents used ASL as the home language. It is unclear whether ASL was indeed the first language of most of these students, as the age of enrolment in the program was somewhere between 5;10 and 10;8, and it may be that students had sufficient access to English in the face-to-face form to enable English literacy skills. The authors examined the reading comprehension results of the Stanford Achievement Test (SAT-10) for 56 students in grades 8 to grades 11. Of this group, 32 students were deemed highly competent in ASL and 24 were considered less competent in the language. 37% of students who were highly proficient ASL users scored at the above-grade performance level in the Reading Comprehension subtest, but

8.4% of students who were not proficient ASL users also scored at this level. Overall, the authors content that the ASL proficiency "does not guarantee successful performance but does significantly increase the likelihood of successful performance on standardized tests" (p.166).

Grushkin (2017) argued that a written form of sign language (i.e. ASL) could be supportive as a route to literacy, as it has been demonstrated that students who have developed reading and writing skills in one language can transfer these skills to literacy learning in their second and third languages (Deacon et al., 2006; Lam & Chen, 2017). But there is no evidence that this route alone (i.e., a written form of ASL) can stand in for acquiring competence in a face-to-face form of the L2 (i.e. English). Mayer (2017) explains that:

> "L1 literacy alone is not sufficient for the development of literacy in L2. Regardless of the extent of the possible transfer that may occur between reading and writing skills in L1 and L2, language specific skills in the face-to-face form of the L2 are still necessary. It cannot be overemphasized that a threshold level of proficiency in the spoken L2 is an essential condition for transfer to be realized, and it is not possible to circumvent this requirement (e.g., communicative competence in spoken and/or signed English) in order to learn to read and write in L2. Therefore, even if there were a written form of ASL, this alone would not be sufficient for the development of literacy in English" (p.554).

Mayer and Trezek (2020) reviewed the literature to identify studies reporting literacy outcomes of deaf students in sign bilingual programs over the last 20 years (i.e., from 1997-2017). The criteria for inclusion in the literature review were limited to peer reviewed empirical articles written in English that identified reading and writing outcomes based on criterion or norm-referenced measures or grade level equivalents. Only three studies were identified fitting the criteria reporting on 127 students' specific reading outcome with no studies reporting data on

writing outcomes. The overall findings from the three studies reveal that deaf students who are educated in sign bilingual programs are not meeting grade level expectations in reading.

In a 2022 study Scott documented the reading achievement of 52 middle-high school students at 5 US bilingual schools. "On the measure of reading comprehension, the average score was 469, which is approximately equivalent to a grade level of 3.5, though it ranged from 438 (grade: 2.5) to a high of 563 (grade: 12.0)" (p. 3352), Across models, it was found that “academic English proficiency was a significant predictor of reading comprehension" (p. 3354) while ASL proficiency was not found to be a predictor of reading comprehension, nor was it related to any literacy outcomes.

Mayer and Trezek (2020) point out that after 30 years of bilingual-bicultural education, there remains very little research evidence on the benefits of sign bilingual education for developing literacy in L2. As such, this review confirms the need for longitudinal studies examining the claims that, on the basis of linguistic interdependence, students who use ASL as an L1 can learn to read and write in English as an L2 via access to its print form, without also developing proficiency in a face-to-face form of the L2 (see Mayer & Trezek, 2020; Scott & Dostal, 2019 for discussions).

While a focus on sign bilingualism and literacy outcomes remains an important area of research in the field of deaf education, a focus on spoken language bilingualism seems equally pressing given the increase in deaf students enrolling in bilingual spoken language programming, and the paucity of research on this population to date.

2.6 Changed and Changing Context

Two major developments over the past 30 years have had a profound impact on deaf education particularly around language and literacy development. Universal Newborn Hearing

Screening (UNHS) was introduced during the early 2000s (WHO report, 2009) with Ontario developing a program of early identification of hearing loss through the Infant Hearing Program (Durieux-Smith, et al., 2000). Prior to these initiatives, identification of the hearing loss was relatively late in a child's life, often over the age of 5 years, meaning that intervention and management were delayed beyond the optimal time for language development (Durieux-Smith et al., 2008; Hyde, 2005). UNHS has resulted in most deaf infants being identified in the first six months of life, allowing for earlier intervention, earlier access to hearing technologies, and ultimately spoken language (Edmond et al., 2022). Concomitantly, significant advancements and improvements have been made in the area of hearing technologies.

Early hearing aids were so large that they needed to be kept on a table (Pintner, 1942) and afforded little benefit for understanding speech, even if they could have been used by children. Until the 1980s, hearing aids were often body-worn, and provided very little access to the high frequency sounds that are most important for discriminating speech. The 1980s and 1990s brought important developments in amplification, including the availability of digital circuits (allowing for more precise and complex hearing aid algorithms), the introduction of systematic hearing aid fitting software specifically for children, and a better understanding of the unique amplification needs of children compared to adults (Seewald et al., 2005).

Approval of pediatric cochlear implants by Health Canada occurred in 1990 and currently, there are more than one million cochlear implant users worldwide (Zeng, 2022). Initially children received one single implant and only those children over 5 years of age with bilateral severe to profound hearing losses who did not benefit from digital hearing aids were considered for candidacy (Hanrahan, 2011).

Bilateral cochlear implantation was introduced in Ontario in 2006, and it is now standard practice to implant bilaterally, usually by one year of age (Papsin & Gordon, 2008; Warner-Czyz et al., 2022). It has been found that when a child's auditory system is developing, providing input to both ears assures normal cortical development and provides advantages for speech development and localization acuity while the brain is still plastic (Brown & Balkany, 2007; Ching et al., 2007; Litovsky et al., 2006; Sharma et al., 2009), and outcomes are deemed as "superior" when compared with their unilaterally implanted peers (Gifford, 2020). Candidacy requirements in the current environment have also been broadened to include children with greater residual hearing and even those with single-sided deafness (Na et al., 2020; Warner-Czyz et al., 2022).

The combination of earlier identification of hearing loss and improvements in hearing technologies including cochlear implantation has had a dramatic positive shift on language outcomes for deaf children. The authors of a longitudinal study (i.e., Longitudinal Outcomes of Children with Hearing Impairment, (LOCHI)) of 470 deaf children in Australia reported that "language delay in children with permanent childhood hearing loss (PCHL) is abatable, or in some cases, completely preventable" (Ching & Leigh, 2020). In the LOCHI study it was found that through early intervention, parental involvement, and early effective device fitting; use of hearing technology reached 85% of use during waking hours with more than 75% of children using their devices consistently during all waking hours by age 5. When compared to the average age of identification prior to the UNHS programs, this group of students received access to language nearly 5 years sooner than their peers from the 1990's. Further, it was reported that earlier intervention was aligned with better (i.e., age appropriate) language development (Ching et al., 2018; Cowan et al., 2018). Children who were implanted at 24 months of age had lower

language development scores by 1.4 SD than those who received a CI by 6 months. Children who received hearing aids earlier were similarly advantaged with those amplified at 24 months having poorer outcomes than those amplified at 3 months.

As a group, deaf learners who have benefitted from this changed context are accessing spoken language in greater quality and quantity during the critical language development period. Typically developing children are born hard-wired to receive language input and naturally enjoy activities that serve to build their expressive and receptive language (Moore & Linthicum, 2007). This rests on four conditions being in place that allow for language to be naturally acquired: (i) quantity and quality of exposure, (ii) to accessible language, (iii) through meaningful interactions, (iv) with capable users (Mayer, 2007; Mayer & Trezek, 2015).

Indeed, the optimal period for this language development has proven to be during the first five years of life and most hearing children have the advantage of access to significant language input with very little effort during this critical period. Deaf children often have not had the opportunity to develop their expressive and receptive language during this critical period because these acquisition conditions are not always met. In contrast to typically hearing children, who have the advantage of receiving substantial language input with very little effort during this time, many deaf children faced significant challenges accessing a complete spoken language model and thus experience the subsequent negative effects on language development. To avert these effects, the issue of access must be addressed so that deaf children can engage in those critical, contingently responsive interactions with their caregivers to allow for language to develop. One of the foremost issues facing deaf children has been that this consistent, ready and clear access to spoken language cannot be assumed, but must be addressed (Akamatsu et al., 2008; Archbold,

2015; Binos et al., 2021; Conrad, 1973; Hyde & Punch, 2011; Paul 2001; Power & Hyde, 1997; Stein et al., 1983; Tomblin et al., 1999; White et al., 2015; Yoshinaga-Itano, 2006).

Tomblin et al. (2005) found that earlier implantation resulted in more rapid language growth, and Dettman et al. (2007) reported that the language growth rates of deaf children implanted before 12 months of age were consistent with the growth rates expected of hearing children. Fagan and Pisoni (2010) found that the vocabulary of deaf children with cochlear implants reflected the number of years' experience they had with access to spoken language; so that while standard scores were below the test mean, they did reflect the years of implant use and the extent to which meaningful linguistic interactions occurred. There is no doubt that the combined effect of early identification with highly sophisticated hearing technologies have afforded better quality interactions with language for deaf learners that has improved language outcomes overall (see Ganek et al., 2012 for a review).

2.7 Literacy Development

Well into the late 20th century, the mean reading and writing achievement of deaf students continued to hover between the third and fourth grade level irrespective of program, communication philosophy or type of remediation (Allen, 1986; Conrad, 1979; Pintner and Paterson, 1916; Qi & Mitchell, 2012; Traxler, 2000) with approximately 30% of deaf high school graduates leaving school "functionally illiterate" (Marschark et al. 2002; Wang et al., 2017). Kelly (1993) studied skilled and average deaf readers focusing on the recall of English function words and inflections. He noted that average deaf readers were reading at a third-grade level and that only 3% of deaf 18 year-olds were reading at the level of a hearing age peer. A decade later, a longitudinal analysis in the United States (Qi & Mitchell, 2012) reporting on every cohort of students aged 8 to 17 between 1974 and 2003 found that the normative performance on the

reading comprehension subtest of the SAT-9 was at or below the grade four reading level. This undeniable pattern of outcomes has persisted since Pintner and Paterson (1916) first documented findings noting that irrespective of age of onset or educational programming, academic scores fell between the second and fourth grade with very few deaf students achieving better than a fourth-grade level. This poor performance has generally been attributed to the fact that most deaf students come to learning to read and write with language related delays and deficits that can be attributed to limited access to the spoken language of the text.

For all learners, face-to-face language underpins literacy. There exists a robust body of research that confirms the correlation between early meaningful linguistic interactions and language development to later literacy learning (Bishop & Snowling, 2004; Catts, 1997; Chall, 1996; Dickinson et al., 2010; Halliday, 1993; Ramey & Ramey, 2006; Watson, 2001) and it would be reasonable to suggest that the same would hold true for deaf students (Mayer, 2007; Mayer & Trezek, 2015; Musselman, 2000; Paul, et al., 2013; Paul & Alqraini, 2019; Perfetti & Sandak, 2000). All children begin their journey to highly complex interactions with text with a period of literacy readiness that relies on the knowledge and growth of their own spoken language (Chall, 1967/1996). The metacognitive processes required to interpret and benefit from reading and writing instruction rely on a firm foundation in the language of the text.

On this basis, it was predicted that the improved language development resulting from early identification and effective intervention with hearing technologies would influence literacy outcomes in a positive way (see Hartman et al., 2019; Mayer & Leigh, 2010; Spencer & Marschark, 2003 for discussions), and it is the case that such a significant shift has been realized (Easterbrooks & Alvarez, 2012; Mayer & Trezek, 2018; 2023b; 2024; Mayer et al., 2021; Nassrallah et al., 2018; Pimperton et al., 2014; Smolen et al., 2020). Evidence from a study

following children who had received hearing technology before age 5 in the UK suggests that knowledge of spoken English has shown to be an important concurrent predictor of reading ability as well as a longitudinal predictor of reading ability for deaf children between 7 and 10 years of age (Archbold et al., 2008). Pimperton et al. (2014) reported the reading performance of 76 deaf students, age 13 to 19 years, divided into two cohorts, those whose hearing loss was identified by the age of nine months (n = 35) and those identified later (n = 41). The early and late groups demonstrated mean reading comprehension z-scores that were 0.63 and 1.75 standard deviations (respectively) below the mean reading z-score in the typically hearing comparison cohort. Notably, it was early confirmation of hearing loss (i.e., by nine months) that was associated with the most significant benefits in the teenage years, with these benefits increasing over time.

That said, despite technological advances and earlier identification, there continues to be variability in achievement, and realizing age-appropriate outcomes remains a challenge for some deaf children (Arfé, 2015; Geers & Hayes, 2011; Kyle & Cain, 2015; Kyle & Harris, 2010). Kyle and Cain (2015) investigated the reading comprehension skills of a heterogeneous group (i.e., degree of hearing loss, hearing technology, communication method, educational setting) of deaf 10- and 11-year-olds (N=47) in the UK. They found that reading comprehension scores for the deaf students were poorer than those of the hearing cohort when matched with both chronological age and word reading level. Houston et al. (2018) reported that although deaf children from this new generation of early identified/early hearing technology fitting are evidencing better reading outcomes, the two areas that continue to mark challenges for this cohort include phonological processing and written expression.

More recently, Bharadwaj and Barlow (2020) examined the reading outcomes of 17 students with bilateral prelingual hearing loss age 8:0 to 11:0 enrolled in grades three through five at a private oral school for the deaf. Results of the Passage Comprehension subtest of the *Woodcock Reading Mastery Test-Third Edition* used to assess reading comprehension revealed a mean standard score in the average range (i.e., 85 to 115) in relation to the normative sample.

Mayer et al. (2021) found that deaf students in a large urban school board (N=70) were achieving within the average range in reading when assessed using the Woodcock Johnson III-Diagnostic Reading Battery. A diverse group of students ranging from grade four to grade 12 were included; 20% were from self-contained or congregated settings, and 80% were served by itinerant teachers of the deaf while attending general education classes. The study participants provided a robust representation of the demographics in urban mainstream settings; 41% of students were from multilingual homes representing 16 different home languages, had a range of hearing losses from unilateral mild to bilateral profound, and used all types of hearing technologies to varying degrees of consistency. Twenty percent (n=14) of the students were identified with additional exceptionalities but none with intellectual disabilities. As expected, demographic variables did impact the findings for individual subtests, but overall, almost ninety percent of students using spoken English scored in the average range in reading. A further examination of the reading achievement of the CI users in this group (*N*=13) evidenced performance within the low average range on a standardized assessment of reading in all areas with the exception of phonological awareness with wide variability across participants (Mayer & Trezek, 2024).

An investigation of the writing achievement of a subset of this same cohort of school-aged deaf learners (*N* = 64) indicated a relatively high percentage of participants performed in

the average range or higher on a standardized, norm-referenced assessment, the *Test of Written Language-Fourth Edition* (TOWL-4, Hammill & Larsen, 2009) (Mayer & Trezek, 2023).

Wang and colleagues (2021) conducted a meta-analysis with data from 47 published articles examining differences in reading achievement between deaf students with CIs and their typically hearing peers. Comparisons between students with CIs and their hearing peers were based on data from 43 independent samples that represented approximately 900 CI users and nearly 2,500 hearing peers. While findings indicated that students with CIs scored statistically significantly lower (i.e., 1.39 standard deviations below their hearing peers) in all areas except fluency, it must be underscored that their scores still indicated achievement in the average range.

It is clear that literacy outcomes evidenced in the current research indicate performance that is both an improvement from the historically reported fourth grade plateau of the past, and in many cases, commensurate with hearing age peers. However, it is also the case that the evidence base is not as robust as it needs to be, not only in terms of how students are doing, but also in identifying outcomes for deaf students in a range of language learning situations and contexts (e.g., in bilingual settings), and in accounting for a range of demographic (e.g., SES, home language) and child variables (e.g., additional disabilities, use of hearing technologies, age at intervention). Broadening the research focus to address this heterogeneity signals an important next step in developing an up to date understanding of the literacy achievement of deaf students. One cohort that has been generally absent from the research reported to date is the group of deaf students who are spoken language bilinguals.

2.8 Spoken Language Bilingualism

Given that most deaf children are exposed to spoken language as the L1 in the home (Ganek et al., 2012) and with statistics from the Canadian 2016 census revealing that 23% of

Canadian households report speaking a minority language (Government of Canada, 2017), it is increasingly common that deaf children are born into a context of spoken language bilingualism. For example, in their investigation of literacy achievement, Mayer & colleagues (2021) found that 41% of the deaf participants in their study came from homes where English was not the first language. And as noted above, in the current context, early identification in conjunction with earlier fitting and improvements in hearing technologies (including cochlear implants) allows for meaningful, early access to these spoken language(s) for most deaf children during the critical period for language development.

Support for spoken language bilingualism for deaf children is increasing (Alfano & Douglas, 2018; Bunta et al. 2016; Wright et al., 2023), representing a shift from historical positions in which this was not seen as a viable option. This thinking is in line with the argument that "there are no neurocognitive limitations on infants' innate capacity to acquire two languages simultaneously" (Genesee, 2003, p. 279), and stands in stark contrast to earlier views in which families were discouraged from speaking any language other than the majority language (i.e., English) to any child with language related exceptionalities including those with a hearing loss (Simpson, 2023).

To date, little is known about spoken language bilingualism and deaf learners, and the extent to which parents are even presented with this as an educational option. A preliminary review of the literature revealed that The Alberta chapter of Hands and Voices' Parent Toolkit is the only document found addressing the question of feasibility of French immersion programming for deaf students (Alberta Hands and Voices, 2017). One of the considerations addressed in the Parent Toolkit is the emphasis on early and prolonged access to audition and its profound impact on language development. The combination of early identification and daily

consistent use of high-performance hearing technologies will support the language development that allows for age-appropriate literacy development in both L1 and L2. The bottom line is that meaningful auditory access is critical for language and literacy development in any spoken language (Mayer & Trezek, 2018).

Overall, there is a paucity of research focusing on spoken language bilingualism in deaf students, and even fewer studies examining the literacy achievements of these learners. Teschendorf et al. (2011) studied 93 students in Germany who received cochlear implants before the age of 6. Of the 93 participants, 52 were from bilingual and 41 from monolingual homes. A battery of oral language assessments was administered and it was found that the majority of students from bilingual homes lagged in language development both in German and their home first language (L1). Only a small minority of bilingual students met the oral language accomplishments of their peers from monolingual homes.

Deriaz et al. (2014) carried out an investigation with 14 deaf children in France who had received cochlear implants before the age of 5 years, 5 months. Half of the students were from bilingual homes while the other half were from monolingual, French speaking homes. Again, the monolingual students outperformed the bilingual students on all measures of language development.

Delcenserie et al. (2019) compared three groups of learners (i.e., those who were Internationally Adopted (IA), deaf learners who use cochlear implants (CI), and those identified with a Specific Language Impairment (SLI)) with varying later exposures to French language, to typical monolingual and bilingual learners. They employed a battery of assessments including both non-verbal and language assessments that were all normed on French monolingual students. The researchers did not find any significant differences in the students in the areas of processing,

attention, non-verbal cognition skills or social-emotional control, but among the three groups, the SLI and CI learners were most impacted by later exposure when developing language.

On their podcast All Ears at CHILD's VOICE: A Hearing Loss Podcast, hosts Fritz & Brock (2019) interviewed Michael Douglas, a speech language pathologist and certified language and listening specialist in the United States. In the episode, Douglas proposes a new way of thinking about deaf students and spoken language bilingualism, challenging the traditional approach with respect to counselling English Language Learning (ELL) families. In a traditional auditory-verbal therapy approach, therapists and teachers of the deaf work closely with families in weekly sessions, teaching them to model the spoken language of the dominant culture with their child and encouraging daily listening equipment use.

After working with many Spanish speaking mothers who struggled to learn English in order to provide strong English language models to their deaf child, Douglas identified two critical problems with this model: 1) ELL parents do not provide a good language model of English, and 2) ELL families are robbed of the ability to speak to their children in "the language of my [their] heart" (Fritz & Brock, 2019, 15:25). This is consistent with bilingual and multilingual research for hearing students (Fillmore, 1991; Kempert et al., 2011).

Wright and colleagues (2023) surveyed a group of audiologists, qualified and unqualified teachers of the deaf, and speech language pathologists in the UK to examine their beliefs about spoken language bilingualism as an option for deaf children. Overall, most of the professionals polled believed that deaf learners with severe-to-profound hearing loss who receive a cochlear implant before the age of 2 could successfully achieve spoken language bilingualism. The authors of the study concluded that this would suggest professionals also believe deaf learners with less severe hearing losses using other varieties of hearing technology (e.g., hearing aids)

would also benefit from spoken language bilingualism. In terms of the means to achieve bilingualism, most of the group acknowledged that it is the quality and quantity of the spoken language exposure via capable users that most greatly impacts the development of the two spoken languages. Among the list of benefits that the professionals listed were improved family relationships, maintenance of heritage or culture, and an overall improvement in a sense of self/identity.

Relatively recent research focussing on ELL families using their first language with their deaf children stands in contrast to the assertions of Teschendorf et al. (2011) and Deriaz et al. (2014) who argue that, in the early years, learning one spoken language well should be the goal. Bunta et al. (2016) note that there is a paucity of research regarding students with hearing loss who are learning more than one language despite the growing number of dual language learners who are receiving cochlear implants and hearing aids. In their study, they found that bilingual deaf children who received support in their home language significantly outperformed the deaf children from Spanish-speaking homes who received English-only support. Bilingual support provided advantages for these children on both the raw and language age scores from the Preschool Language Scale-4 (PLS-4) specifically on the Total Language subscale and the Expressive Communication measure. While the data from this study was limited to bilingual oral language development, it seems reasonable to suggest that these oral language skills should also support the development of reading and writing skills.

This nascent research seems to indicate that with appropriate time and support, deaf students who have acquired a spoken L1 would be equally flexible in being able to acquire a second spoken language as L2. It would also be reasonable to expect that this would apply to deaf students from minority language homes (e.g., students from francophone homes attending

French minority schools) as they continue to learn their first language in school but acquire the majority language, English, through community exposure and interactions.

2.9 Summary

Bilingual education has gained popularity over the last 30 to 40 years and this literature review reveals that there have been positive language and literacy outcomes in both L1 and L2 for most hearing learners. Yet, historically, bilingual programming has been reserved for the linguistically elite (e.g., those with no additional learning needs). With approximately 25% of the Canadian school-age population being counted as having difficulty acquiring age-appropriate literacy skills (The Conference Board of Canada, 2020), the bilingual doors have been closed to one quarter of our school-aged population. Yet, based on the available research, there is no compelling argument that these students, including those who are deaf, should be deprived of the opportunity to learn a second language, even though they may need additional support to do so.

This deaf cohort would be of particular interest in the Canadian context - a bilingual country with French and English as the designated official spoken languages. In the early part of my career I observed that, given the challenges in developing competence in even one language, becoming a spoken language bilingual was not viewed by many practitioners as a priority, or even an attainable goal for deaf learners, and to make room in their school timetable for withdrawal support, they were typically exempted from taking courses in French. It was also unusual for a deaf student to be enrolled in a French immersion program. This is consistent with the thinking that prevailed for other groups who were considered “at risk” (e.g., immigrants, Canadian-born multilingual (ELL) students, students with learning difficulties) (Arnett & Mady, 2018; Cobb, 2015; Delcourt, 2019; Genesee, 2007; Mady, 2015).

However there has been a shift in this thinking. Where once only students from endogamous families or with sophisticated spoken French language skills were considered appropriate candidates for French immersion or French-language schools, a response to the following argument has been made for expanding enrolment. Access to French-language schools changed because of a policy shift in 2009 allowing allophone immigrants access without passing through the "admissions" committee/evaluation for non-rights holders (Ontario, 2024b). In his 2007 review of the research evidence, Genesee argues that:

> Several important ethical and legal questions are also at issue. Ethical issues arise because to exclude students who might face difficulty in immersion from participation in these programs is to deprive them of access to what is arguably the most effective form of second language (L2) education and, in turn, from an important life- and job-related skill, namely, proficiency in French. The government of Canada (2003) recently embarked on an ambitious initiative to double the number of young Canadians who are proficient in both official languages by 2013. If this initiative is to apply to all young Canadians, scientific information is needed that attests to benefits of immersion for at-risk students, so that parents and schools are reassured that including such students is appropriate. In addition, bilingualism is important not only in the Canadian context but also in the international context, given the globalization of the economy and of employment opportunities. (p.657)

While not expansive, there is a growing body of research evidence detailing the benefits of spoken language bilingualism for deaf learners (e.g., Bunta & Douglas, 2013; Bunta et al., 2016; Guiberson, 2013). Nevertheless, the research on deaf students in bilingual environments remains inadequate with many of the published studies focussing on bilingualism in the context of a

spoken and a signed language (e.g., Cummins, 2007). Research evidence demonstrating that early identification and intervention provide a good foundation for deaf learners to acquire two or more spoken languages remains thin. In the Canadian context, there have not been any documented studies looking at deaf learners attending French Minority Schools and living in English majority communities. Efforts to address this gap in the research provide the motivation for the study described in the next chapter.

Chapter 3: Methodology

The primary purposes of this study are to: 1) examine the language and literacy outcomes of four francophone deaf students who are living in English majority settings and attending French language schools, and 2) investigate the factors that led parents to make an educational choice for bilingualism and their feelings about this choice, as historically parents were discouraged from opting for bilingualism. This involved comparing the language and literacy achievement of the four participants to age-based norms in French and English, as well as describing demographic and other variables that have been shown to impact performance (e.g., gender, unilateral/bilateral hearing loss, personal amplification, level of auditory functioning, grade placement, additional disabilities, home language, home literacy practices). In addition, parents were interviewed about their decision-making process and their experiences educating their child in a minority language setting. To this end, a mixed methods case study design has been employed.

As noted in Chapter One, the following research questions guided the study: (1) How does the language and literacy achievement of school-aged deaf learners in French language minority schools compare to age-based norms in French and English?, 2) What are the demographic characteristics of the deaf students (i.e., gender, unilateral/bilateral hearing loss, personal amplification, level of auditory functioning, grade placement, additional disabilities, home language, home literacy practices) enrolled in French minority schools and how do they impact outcomes?, 3) How do deaf students and their parents describe their experiences of education in a bilingual environment?, 4) How do parents of deaf students describe their decision-making process around enrolment in minority language education?

3.1 Research Design

Both mixed methods and case study research provide opportunities to address complex issues and problems while providing insights into pressing social and educational situations (Plano et al., 2018). A mixed methods research design allows the researcher to combine whatever ratio of qualitative and quantitative methods (i.e., data and analysis) is required to solve the research questions in a single study (Tashakkori & Teddlie, 2010). With a small participant group, the strengths of a mixed method study, where interaction with quantitative and qualitative data occur, combined with the characteristics of a case study has provided the opportunity to explore and discover transferable results. "A mixed methods case study design is a type of mixed methods study in which the quantitative and qualitative data collection, results, and integration are used to provide in-depth evidence for a case(s) or to develop cases for comparative analysis" (Creswell & Plano Clarke, 2018, p.116). According to Tashakkori & Teddlie (2010), a mixed methods design has value and credibility, especially when discrepancies occur in the qualitative and quantitative data. For this study, a mixed method case study design has permitted the gathering of data through multiple measures so that rich descriptions of language and literacy development, perspectives, and outcomes for individual students could be developed. This allows for reporting evidence-based language and literacy outcomes via the quantitative measures that then may provide support for the parental decision-making to opt for bilingual education that is investigated through the qualitative interviews.

There seems to be relative openness to the use of mixed methods research in deaf education (see Hyde et al., 2010; Mertens, 2008, 2010) as there is a high degree of heterogeneity in this low incidence population. Collecting both quantitative and qualitative data has resulted in a higher quality of conclusions based on the available evidence (i.e., inferences that can be

drawn), allowing for a richer exploration of the finding overall. For example, in a given case study, it is possible that participants' quantitative results do not align with perceptions of their own literacy skills, and if this occurs, it would be feasible to evaluate possible causes and reconcile these disparities. Furthermore, employing a mixed method research design lends increased robustness and credibility to the findings by allowing for triangulation of the data through multiple sources, better ensuring internal validity and reliability in the interpretation of results.

Finally, a mixed methods research design has afforded the possibility of developing a detailed profile for each participant as is developed in this thesis. The qualitative data highlights the experiences of both the student and parent participants, providing important insights (i.e., multiple, constructed realities depending on the background of the participants) into individual situations that impact findings obtained from the quantitative measures. As Werfel and Douglas (2017) argue, quantitative data obtained via norm-referenced language and literacy assessments do not provide a fulsome picture of the reality deaf learners face in the mainstream educational settings (e.g., may overestimate language capabilities that impact literacy development). Having two data sets to mutually inform each other affords the opportunity to provide a complete picture of the language and literacy learning situation of these four francophone deaf students living in English majority settings who are attending minority French language schools.

3.2 Methodology

3.2.1 Participants and Setting

Southern Ontario is an anglophone area in Canada where the majority of services and community events are held in English. That said, Ontario is officially a bilingual province under the Education Act with both French and English recognized as languages of instruction. As such,

there are four publicly funded school systems in Ontario: French Catholic, French public, English Catholic and English public. Within the English systems, French immersion programming is available where at least 25% of the curriculum is conducted in French (Lepage & Corbeil, 2013). Prior to 2009, only the children of francophone parents were offered enrolment in francophone schools under the Article 23 of the Canadian Charter of Rights and Freedoms (Government of Canada, 1999). Policy Memorandum 148 required French-language school boards to become more “streamlined” and broaden their enrolment procedure to include “newcomers who are French-speaking” (Ontario, 2024b).

Using a purposive sampling technique, four deaf francophone participants educated primarily in the French minority school system were identified through personal connections. Two female students (aged 11 and 17) and two male students (aged 16 and 17) were recruited to participate in the study along with their parents. Three of the four student participants wear hearing aids with hearing losses ranging from mild to moderate, moderate to severe, and moderately-severe to severe respectively. One participant has a profound hearing loss, wears bilateral cochlear implants, and has been identified with additional exceptionalities.

Three of the four participants were known to me as I had been their preschool homevisiting teacher up until the age of three where I had worked with them in their homes and had a connection with the families. However, prior to the request to participate in the current study, I had not had any further communication with these families. One participant was unknown to the me until he joined the study.

All four students communicate comfortably in both French and English and come from exogamous homes where one parent is francophone and the other parent is anglophone. Three of the four participants had exposure to both languages prior to school entry, and the participant

whose father is francophone began learning French only upon school entry. One participant moved to a French Immersion setting in the sixth grade and an English high school for grade nine after additional learning disabilities were identified because the parents found these programs had more resources available. The language of instruction for the participants in the school setting is, or has been, primarily in French. All the students had sufficient language and literacy abilities in French and/or English to provide both oral and written responses in both languages to questionnaires and interviews during the data collection. Detailed profiles of the students will be provided in the Chapter Four.

3.3 Data Collection

Quantitative and qualitative data were collected from both student and parent participants. For students, this included an interview and the administration of four standardized tests to assess language and literacy abilities in both English and French including the Clinical Evaluation of Language Fundamentals – Fifth Edition [CELF-5] (Wiig et al., 2013), Évaluation clinique des notions langagières fondamentales Cinquième édition: Version pour francophones du Canada [CELF-5-cdn-f] (Wiig et al., 2019), Wechsler Individual Achievement Test- Third Edition (WIAT-III) (Wechsler, 2009), and Test de rendement individuel de Wechsler: Version pour francophones du Canada (WIAT-II-cdn-f) (Wechsler, 2008). Uncorrected written language samples were also collected.

Parents of the students participated in an interview and completed a written questionnaire, the Categories of Auditory Performance-II [CAP-II] (Archbold et al., 1995, 1998; Gilmour, 2010), and the Speech Intelligibility Rating scale [SIR] (Allen et al., 2001). In every home, it was primarily the francophone parent who sat down for the recorded interview, however, the anglophone parents were often present and provided informal qualitative data

through incidental conversations. While this was not a function of the study design, the francophone parents tended to include their own language learning stories and experiences as the rationale to justify their decision to raise their deaf children bilingually.

3.3.1 Student Measures

3.3.1.1 Student Interview

Interviews with the students were conducted in their language of choice immediately following the parent interview. In all but one case, student participants were present for their parents' interview and provided some additional insight into their parents' perspectives. Interviewing the parents first, permitted the experience of developing a relationship with the student participant informally while they observed the interaction with their parent(s). During their interviews, the students were encouraged to pose questions about the study allowing for a more detailed explanation of the purpose of the study to be given. Oftentimes, this discussion led to interesting conversation about identity and explanations of various identity topics across d/Deaf communities. All this additional time spent gathering qualitative data served to establish a rapport with the student participants prior to launching into the formal quantitative data collection.

Some questions from the interview were related to language and literacy activities, other questions collected information related to home and community literacy experiences (e.g., visits to the library, preferred language to read in at home), perspectives on reading and writing in French at school (e.g., favourite literacy activity, most difficult literacy activity), perspectives about access to educational accommodations or supports (e.g., captioning, teacher of the deaf) and perceptions around literacy and bilingualism (e.g., language that they read more fluently in, preferred language to write in) (see Appendix A for sample questions).

Allowing students to select the language for the interview provided insights about their preferred face-to-face language or their ability to discuss certain topics in one language over another. The interviews were video recorded and transcribed to provide a basis for rating the CAP-II and the SIR (see descriptions below) and to provide interesting comments from the deaf learners. Additional quantitative data was also gathered from the hours of video recordings where incidental conversations occurred between the examiner and the student participant. These incidental conversations provided further insight into student participants' language experiences.

3.3.1.2 Clinical Evaluation of Language Fundamentals – Fifth Edition [CELF-5] (Wiig et al., 2013).

Available in both French and English, the CELF is a battery of tests used to measure expressive and receptive language skills in context. There are seven tests for students in the 9-21 age range: i) Word Classes, ii) Formulating Sentences, iii) Sentence Assembly, iv) Recalling Sentences, v) Understanding Spoken Paragraphs, vi) Word Definitions, and vii) Semantic Relationships. The Word Classes test measures a student's ability to discern relationships among words (e.g., antonyms or synonyms); students select the two pictures or words that go together from the three or four presented. The Formulating Sentences (FS) and Sentence Assembly (SA) tests require the student to express semantically and grammatically accurate sentences. (FS) requires the student to use a target word connected to a stimulus picture; for (SA) the student should produce sentences from single words or word combinations. The Recalling Sentences test presents increasingly lengthy and complex sentences for recall measuring the ability to use linguistic knowledge and phonological working memory. The Understanding Spoken Paragraphs, Semantic Relationships and Word Definitions tests measure the ability to: 1) interpret information in a paragraph when presented orally, 2) interpret and make selections from four

visually presented options for comparison, location, time serial order and passive voice, and 3) define orally presented words, respectively. Together this battery of tests permit the examiner to assess developing language skills where semantic language applications increase incrementally.

The CELF-5 is normed on a sample of 2,380 students aged 5 to 21 years who were stratified by their geographic location in the United States, age, gender, race/ethnicity, and education of primary caregiver. The measures of reliability of the CELF-5 indicate internal test reliability scores ranging from good to excellent (.85-.98) across age ranges and subtests except for the writing subtest that has an acceptable reliability score of .75 (Scheller, 2014). The CELF-5 includes test reliability scores for four specific clinical groups: language disorder, learning disability (reading and writing), autism spectrum disorder, and average, which ranged from good to excellent (.81- .99). Student participants were assessed using the aforementioned tests from the CELF-5 during a one-hour video-recorded session.

3.3.1.3 Évaluation clinique des notions langagières fondamentales Cinquième édition: Version pour francophones du Canada [CELF-5-cdn-f] (Wiig et al., 2019).

Similar to the English version of the CELF-5, the CELF-5-cdn-f provides an assessment normed on French Canadian students aged 5 to 16 years and examines expressive and receptive language providing percentile ranks, normative scales and age equivalents. Student participants were assessed using the CELF-5-cdn-f during a one-hour video-recorded session. Even though one student's age at the time of examination was beyond the normative sample group, comparisons could be made using raw scores providing useful information.

3.3.1.4 Wechsler Individual Achievement Test- Third Edition (WIAT-III) (Wechsler, 2009)

The Wechsler Individual Achievement Test (WIAT) was the standardized assessment selected to assess language and literacy skills in both French and English. The third edition was

used in English because it was thought to be more closely related to the second edition used to assess the students in French. Students were assessed during a 2-hour video-recorded session. Students were offered breaks and snacks throughout the assessment time period. Video-recordings of the assessments were later transcribed to permit cross-referencing of responses and to capture incidental conversations that occurred. For example, some student participants reflected on their competency in the languages as the tests were translations, and topics were consistent from one language version to the other. Some participants stopped the assessment to share stories prompted by the content of the test.

The WIAT-III was designed for use with individuals, aged 4 through 50. There are seven composite sections, each with several subtests: i) Basic Reading, ii) Decoding, iii), Reading Fluency, iv) Oral Language, v) Phonological Processing, vi) Orthographic Processing, and vii) Dyslexia Index. The core composite score summary provides a breakdown of raw score, standard score, percentile rank, age equivalent, and grade equivalent.

3.3.1.5 Test de rendement individuel de Wechsler: deuxième edition version pour francophones du Canada (WIAT-II-cdn-f) (Wechsler, 2008)

The WIAT-II-cdn-f was the standardized measure selected to assess language and literacy achievement in French. Translated from the English version in 2008, the WIAT-II-cdn-f is used with students from 6 to 29 years of age. The translated version of the test was normed on a combined Franco-Québecois (n=304) and Franco-Ontarian sample (n=1088) ranging from ages 6 to 17. The subtests include topics in reading (e.g., Sous tests de lecture: lecture de mots, compréhension de lecture, décodage de pseudo mots), writing, oral language, and mathematics (Monetta et al., 2014). The test reliability and validity match the original test and scores include percentile rank, stanine, age equivalents and curve norm with quartile score.

3.3.1.6 Uncorrected Written Language Samples

Two uncorrected written language samples, one in French and one in English, were requested of the student participants. The student participants were asked to share a recent piece of written work; options for the writing included school-related tasks (e.g., essays) or something the student had been working on at home (e.g., creative writing). The Ontario Achievement Chart for English, Grade 11 & 12 (Ontario, 2024a), in which there are four distinct category charts: Knowledge and Understanding, Thinking, Communication, Application and Le curriculum de l'Ontario: Français 11e et 12e années (Ministère de l'éducation Ontario, 2007) were consulted as frameworks for considering the written language samples.

3.3.2 Parent Measures

3.3.2.1 Parent Interview

Interviews were conducted in the parents' language of choice and open-ended questions expanded upon the themes that were generated by the responses to the written questionnaire and questions within the interview setting (see Appendix B). For example, in addition to describing literacy habits in the home, parents were asked about the nature and language of any media consumption in the home. Also, as additional quantitative data collection, parents were asked to rate their child on the Categories of Auditory Performance -II (CAP-II) (Archbold et al., 1995, 1998; Gilmour, 2010) and on the Speech Intelligibility Rating scale (SIR) (Allen et al., 2001).

Parents were initially contacted via email or phone calls to introduce the goals of the study. Once parents indicated an interest, longer phone calls and emails followed outlining the time commitment for both the qualitative and quantitative data collection. Families were assured that the data collection would be done at their convenience either in their home or an agreed-upon private location such as library workspaces. Every effort was made to make the data

collection robust by administering standardized assessments in both language and literacy in French and English, but always mindful of scheduling sessions at the convenience and availability of the participants. Consent forms for this study were provided to parents in the language of their choice (i.e., English or French). Similarly, deaf student participants were also provided with a choice in language for their assent form. The university ethics committee granted approval for this study (see Appendix C).

To begin, parents and participants sat down for a recorded interview with the author in person or via Zoom. In most cases, parents were interviewed first, and the students were also present during the interview, listening in on their parents' responses so that they could observe the process and get comfortable with the interviewer. The youngest participant was interviewed first and her mother was interviewed second; they were not present for each other's interviews. In the first part of the interviews, parents were encouraged to recall and describe their decision to use two spoken languages with their newly identified child. Parents expanded upon their answers providing important details about their experiences raising their deaf spoken bilingual child.

In the second part of the interviews, parents were prompted to describe the influences on the decision to enroll their child in the French minority school and provide a rating from the Categories of Auditory Performance-II (CAP-II) (Archbold et al., 1995, 1998; Gilmore, 2010), and the Speech Intelligibility Rating scale (SIR) (Allen et al., 2001). With the older student participants, who were present for their parents' interviews, some overlap occurred as they looked to each other when providing responses or added to one another's response from their own perspective. Initial visits and interviews generally lasted more than one hour with families sharing many additional details of their experiences over the years.

After the interviews, parents were asked to complete the written questionnaire, at their

convenience. All interview data has been transcribed as a means to elucidate themes across participant responses.

3.3.2.2 Parent Questionnaire

Parents completed a written questionnaire in their preferred language to report: (1) basic demographic information about their child (e.g., gender, hearing loss, personal amplification, grade, additional disabilities, home language), (2) language and literacy experiences in the home, (3) intervention and services received at preschool and school level, (4) educational placement and history (e.g., inclusive or congregated setting), (5) educational accommodations (e.g., Hearing Assistive Technology (HAT) use, notetaker), (6) external support services (e.g., speech therapy, reading intervention), and (7) background information directly related to their decision-making around enrolment of their deaf child in a French minority school. Families were also asked whether services and supports were provided in French or English (see Appendix D).

3.3.3.3 Categories of Auditory Performance-II [CAP-II] (Archbold et al., 1995, 1998; Gilmour, 2010).

Providing ratings on the CAP-II involved reviewing brief descriptions that correspond to categories on a zero to nine rating scale and selecting the one that best describes the student's auditory perception without the use of speechreading. For example, no awareness of environmental sounds or voice would receive a rating of zero, being able to understand common phrases (e.g., open the door) would be rated a five, and the ability to use the telephone with an unknown speaker in an unpredictable context would be categorized a CAP-II rating of nine (see Appendix E). Once interviews were over parents were provided with the CAP-II in table form to be consulted on their perception of their child's rating on the scale in both languages.

3.3.3.4 Speech Intelligibility Rating scale [SIR] (Allen et al., 2001)

The SIR is a clinical measure of speech intelligibility consisting of a five-point rating scale that increases in levels of complexity following the child's speech production skills. It begins with a rating of "unintelligible speech" and finishes a rating of "connected speech that is intelligible to all listeners" (see Appendix F). Using the video recordings, it was possible to make an accurate rating of each student on the SIR scale.

3.4 Procedures

Data collection occurred over eight months beginning with parent interviews in January 2023 and concluding in August 2023. Ample time was needed to schedule several sessions while considering location of meetings, accommodation of the parent participants' and student participants' schedules. It was important to provide adequate time to collect the data, keeping in mind the need for breaks during the testing and the need to schedule standardized tests on different days. The learners confirmed that their listening technology was working properly prior to each session. The interviews and assessment sessions were scheduled in the families' homes or at other agreed-upon locations where a quiet assessment environment could be ensured. On one occasion, a learner was tested in a less than ideal listening environment, but the location was selected by the parent and the student, and alternative options were not available. The data collection for each student followed a similar process:

(i) Parents were contacted via email and the parent questionnaires and permission forms were attached in a subsequent message.

(ii) Parent participants were interviewed. Interviews were conducted in the participants' language of choice and to establish or re-establish a relationship with the parent participants. Interviews were recorded using a MacBook Air on a table within proximity to the participant. Recordings

were captured as mp4 files, transcribed, and stored securely. Parents were also asked to provide a score for their child on the CAP-II and the SIR. The interviews were approximately 45-60 minutes in length, depending on the detail that the parent provided while responding to the questions.

(iii) The student participants were interviewed. The same process was followed as for the parent interviews; for two of the interviews, the parents were present during the student interview.

(iv) Standardized assessments were administered on two different days with English on one day and French on the other. On both occasions the CELF was administered first, followed by the WIAT. The assessments were administered according to the prescribed protocols in the manual during one session with as many breaks as needed. Allowable accommodations for deaf students on the CELF include extra time for responses; since the CELF is evaluating knowledge in a particular language, only that language can be used to administer the test however none of the learners required additional support in another language or additional accommodations beyond the wearing of their personal listening technology. The following allowable accommodations are suggested through the WIAT publisher (Case, 2005): timing (e.g., extra time, breaks), setting (e.g., quiet room), administration (e.g., directions only can be given in learner's L1, using cued speech, using FM system), presentation format (e.g., repeating directions).

(v) Two written language samples were requested once all standardized assessments were completed. Students were directed to select a recent piece of uncorrected writing. Some learners sent digital copies of their work and others allowed photos to be taken of their writing.

3.5 Data Coding and Analysis

A multi-stage approach was taken to coding and analysing the data from the interviews and subsequent quantitative data collected through the standardized assessments, questionnaires

and checklists (Seidman, 2006). Parent interviews were saved as an mp4 file and uploaded so that computer-generated captioning could be created and for storage purposes. Student interviews were also saved as mp4 files, transcribed, and stored securely. The incidental conversations that occurred and video-captured during the quantitative data collection were also transcribed and considered with the qualitative data.

The captioned files were copied and pasted into a Word documents to create crude, time-stamped transcripts. A thorough examination and editing of the transcripts was done alongside the videos to capture errors in the transcription, tone of voice, and to identify interviewer/interviewee statements. Interviewer statements were coded with green type-print and interviewee statements were left in black type-print. If both parent and student participants were present in the transcript, the student participant statements were captured in blue type-print.

To organize the interview data, charts were created, one for each participant. A narrative analysis was conducted and themes identified (Seidman, 2006). Following methods outlined by Seidman, in addition to creating profiles for each participant, quotes were taken from the transcripts of the interviews or incidental conversations that occurred and organized in a table (see example table in Appendix G). Using this table, connecting threads and patterns were identified. The various categories of topics were narrowed down into themes depending on the number of times a topic was discussed. This allowed presentation and comment on the quotes once the qualitative data was thematically organized.

Results from the student's standardized assessments were scored as per the prescribed guidelines in the technical manual for each test. Three of the standardized assessments, (i.e., CELF-5, CELF-5-cdn-f and WIAT-III), have Composite and Scaled scores with a mean of 100 and a standard deviation of 15. A standard score of 70-85 is below average and from 115 to 130

is above average. The WIAT-II has Composite and Scaled scores with a mean of 100 and a standard deviation of 10. Therefore, a standard score of 90 to 110 indicates moyenne [average], 80 to 90 is moyenne faible [low average] and 110 to 120 is moyenne élevée [high average].

Four individual learner profiles were developed based on the information from both the qualitative and quantitative data. This included their scores on the standardized measures of language and literacy, the demographic information provided by the parents, and the data from both parent and student interviews. "Interpreting is not a process researchers do only near the end of the project…Marking passages that are of interest, labeling them, and grouping them is analytic work that has within it the seeds of interpretation. Crafting a profile is an act of analysis, as is presenting and commenting upon excerpts arranged in categories. Both processes lay the group for interpretation." (Seidman, 2006, pp.128). Relationships between language and literacy outcomes and demographic factors (e.g., degree of hearing loss, type of hearing technology used and consistency of use, educational placement, additional disabilities) were explored. Writing samples were considered using the Ontario Curriculum (K-8): Exemplars (Ontario Ministry of Education and Training, 1999) as a framework for students from grades 4-8. High school students' writing was examined using the learning expectations from the Ontario Curriculum Documents in French and in English (Ontario Ministry of Education, 2000; 2007) as a framework. [5]

3.6 Ethical Considerations

This research project adhered to the ethical standards and policies of the York University Office of Research Ethics and was approved by the Human Participants Review

[5] Since the data collection, these curriculum documents were updated: (Ontario Ministry of Education, 2023).

Committee. Several steps were taken to ensure proper ethical considerations remained throughout the conduction of the study.

Prior to any data collection, informed consent was obtained from the parents. This was done via phone call and email only after they indicated that they would allow their children to participate in the study. Informed assent was obtained from the students to ensure that they understood the study and the time commitments and they were given the opportunity to ask questions (see Appendix H). At each testing session, the students were reminded that withdrawal from the research study continued to be an option and participating in any of the assessments was completely voluntary.

During the interviews and subsequent incidental discussions, the participants were reassured of their confidentiality. In adherence to the ethics recommendations of the university, each participant selected their own pseudonym at the beginning of the interview and all data collection was filed under this pseudonym. Participants agreed to the videorecording of all interviews, assessments and incidental conversations.

All data collected was stored in a locked file cabinet; digital files, including video files were stored on the secure passport York protected York University network or on my password protected Dropbox file. Throughout the data collection and sharing, identities of the participants were protected by blurring of images or anonymization. For confidentiality and especially given the extremely small field of deaf education within the francophone community, any information that could potentially compromise the participants confidentiality was removed.

Chapter 4: Participant Profiles and Findings

In this chapter the stories of each of the student participants will be presented. For each student, this will include demographic information, an overview of language abilities, a description of the home language and literacy environments and the use of hearing and access technologies, in addition to reporting scores on the standardized measures of language, reading and writing in both French and English. As a reminder, when looking at the standard scores, for all measures, the mean score is 100. For scaled scores on the CELF-5, the mean score is 10 with a standard deviation of 3 so that average is between 7 and 13. For the two versions of the CELF-5 and the English version of the WIAT-III, the standard deviation is 15 meaning that standard scores between 85 and 115 are within the average range. For the French version of the WIAT-II, the standard deviation is 10 with scores between 90 and 110 within the average range.

In addition to the data collected via the standardized tests in French and English, the development of these profiles was informed by a narrative analysis of the student and parent interviews (Seidman, 2006). The following themes emerged from the student interviews: 1) language use in the home, 2) interactions in the majority language, 3) motivation, 4) identity, and 5) accommodations and use of assistive technology. In addition to the research focus on decision-making (Simpson, 2023), these themes also emerged in the parent interviews: 1) early intervention supports, 2) emotional motivation for minority language use, and 3) intentional literacy practices in the home.

4.1 Gloria's Story

Gloria is the youngest of the four prelingually deaf student participants in this study. An only child, Gloria has spent her life surrounded by adults and her demeanor bears evidence to this. She presents as a confident, mature, and enthusiastic 11-year-old and was in Grade 6 at a

francophone school at the time of data collection. Identified with a bilateral moderate sensorineural hearing loss through the Ontario Infant Hearing Program, Gloria was fitted with hearing aids at approximately 5 months of age and has been consistent in their use. She was rated by her parents at 9 on the Categories of Auditory Performance-II (CAP-II) and 5 on the Speech Intelligibility Rating scale (SIR) in both languages– indicating the highest level of performance on each of these rating scales (see Table 4.1).

Table 4.1

Gloria: Demographic Data

Age/Grade	11 years, grade 6
Gender	Female
Additional Exceptionalities	None
Degree of hearing loss	Bilateral moderate sensorineural
Personal Amplification	Bilateral hearing aids
Parents' first language	Father – English; Mother - French
Educational setting	French-language school
CAP	English = 9; French = 9
SIR	English = 5; French = 5

Gloria has a good understanding of her moderate hearing loss and the impact that it has on her ability to hear conversational speech. In a quiet environment, if wearing her hearing technology, she can participate in conversation without speechreading[6]. Throughout our assessment sessions, she kept her eyes on the activity at hand while listening to instructions; she did not appear to require speechreading in the quiet listening environment of her home.

[6] Speechreading is a strategy for understanding spoken language through visual cues from lip movements and facial expression combined with auditory information (see Santana et al., 2025 for a review).

On the day of our scheduled interview, Gloria showed me to her kitchen table and offered me a cup of tea with cookies. We discussed the flavour of the tea and she let me know her favourite bubble tea so that I could bring us a treat on my upcoming visits. Gloria and I discussed all of this, as well as the particulars of the case study, in English.

Gloria is well traveled for her age and aspires to live her life in various locations around the world. She is already talking about becoming a vet at St. Michael's University in Turks and Caicos, owning a house in New Jersey where she can "afford a house", and renting an apartment in New York because "houses there are too expensive". Recently, the family toured Africa with her grandparents – a very bilingual experience as one set of grandparents only speak French and the other only English.

The activities that Gloria enjoys outside of the school such as swimming and horseback riding are experienced in English. Music is a big part of Gloria's life. She enjoys playing music for pleasure and has been known to hear a song in a show and figure out how to play it by ear. "Kindermusik" was her first exposure to music when she was a toddler, and the instructor encouraged the family to keep her in music even with the hearing loss diagnosis. She started taking piano through Royal Conservatory at age six and continues to attend weekly piano lessons having recently achieved honours on her exam. Her mother observed that, "She has an ear… she will listen to someone play it and then will play it and she's very good at that…She can read music, but her number one dependency is the hearing of it… piano is a language and it's good for the brain and it's good for math. And I just I'm trying to go [with piano lessons] as long as possible." Gloria's mother also shared a video clip of Gloria's voice lessons, explaining that, "To me, music is a language too…it's a form of communication so when you're frustrated or when

you are excited or when you are joyful, you can use music to express that. So, I always say, anything that helps you communicate is an asset".

Gloria takes language learning as seriously as any other task in her life. She talks about her desire to be perfect, and she pushes herself to do well. This was evident when she completed the assessments for this study, always double checking that she had understood the directions and was following them correctly. The motivation to learn French is in line with her overall desire to succeed academically. It is also rewarding for Gloria to be able to use her French with her extended family, because she does not need French with her friends outside of school or her more immediate family. She recognizes that her initial French speaking experience likely began while attending a daycare attached to her French school even though she knew a little French from her mother at home.

4.1.1 Early Intervention

Gloria's identification through the Ontario Infant Hearing Program connected the family with the community early intervention program. This program provided preschool speech and language services through a speech and language pathologist to support and track language development until school entry. A provincial program offered through the Ministry of Education provided bi-weekly preschool home-visiting through a French-English bilingual teacher of the deaf from 13 months of age, continuing until her transition to school where services were provided by the French teacher of the deaf from the same program.

Gloria's mother spoke emotionally about the support that they received through the provincial home visiting program. Their engagement with the program was robust with three years of bi-weekly visits pausing only during the summer months. Literacy and language

development were the focus of the visits which propelled the family into developing a routine of daily bilingual book sharing in both languages.

Gloria's mother described the support she received following the identification of deafness and the subsequential enrolment in the home-visiting program: "When you get this kind of a diagnosis, you deal with, like, the unknown and 'what does this mean?'... then you get someone…[who] comes in and is [providing] tool after tool. This is what you can do. And then showing the kids succeeding…like just basically dismantling all the fears and just establishing what is normal, and what is achievable, and where we're going to have some issues, and educating us on our biases of noise. And that was huge. Like, we never even thought about, you know, these outside noises and how they interfere with her ability to hear, understanding how hearing aids work, how speech develops in children, and how to support her development and how to have her succeed. Basically, the takeaway is, don't ever assume, you know, that the hearing impairment is going to stop her. Give her the tools, just find out what it is that might be difficult and then just let her figure it out."

4.1.2 Choosing Bilingualism

Gloria's mother explained that it was a deliberate decision they made to speak two languages with their daughter and it stemmed from their desire to provide Gloria with familial connections. The goal was for her to develop enough spoken French to be able to communicate independently with her maternal grandparents in Quebec and her extended family in Belgium.

As is often the case in exogamous families, the majority language of the community, in this case English, becomes the dominant language in the home. Knowing this, Gloria's mother sought out immersion experiences in francophone settings, such as the enrolment in the francophone daycare prior to school entry. She inquired about bilingual early intervention

services for deaf students and was provided with a bilingual teacher of the deaf. She believed that once Gloria was immersed in francophone environments, this exposure to the culture, vocabulary, and information would bolster her ability to speak French in the home. It also took the onus off her to be Gloria's only spoken French language model.

Once enrolled in the daycare at the French Minority school, the decision to send Gloria to the French-language school was a "non-issue" as spoken language bilingualism was familiar to the family because of Gloria's mother's lived experience. At the francophone daycare Gloria's parents were able to observe the French language competencies of the older students in after-school care, confirming their decision to educate Gloria in the minority language setting. As Gloria became more fluent in French, this increased the number of bilingual interactions at home.

Any concerns about whether Gloria would have support for her deafness while at the minority school were put to rest during the transition to school meeting. Due to their experience with other deaf learners in their system, the school administrators were able to assure the family that appropriate accommodations would be available immediately upon school entry. As Gloria's mother noted, "It wasn't the first child who had gone through their doors who had this issue. So, nobody was just like, 'Oh, how are we going to deal with this?' They were like, 'Oh, yeah, we've done this' and 'it's, Oh yeah, it's fine." She recalled engaging in many discussions with their home-visiting teacher, prior to the transition to school meeting with reassurances that if things did not work out, they could simply change schools. Being realistic about the fact that there might be challenges, the family believed that spoken language bilingualism was the best option for Gloria.

The itinerant teacher of the deaf with the French minority school board had a very large territory across southern Ontario and visited Gloria only once a month. These visits ceased after Gloria was in the junior grades where she moved to more infrequent “check-ins” to ensure access needs were being met (e.g., management of the hearing technologies). Initially, Gloria’s mother reported, there seemed to be a bit of overlap with the provincial school consultant and the board itinerant teacher of the deaf. The positive outcome, however, was that the classroom teachers were trained to change hearing aid batteries when required, and the resource teacher in the school was taught to manage the various hearing technologies.

Gloria’s mother reported that any feedback from the school was consistently very positive. This assured the family that language and curriculum access were good. They also believed Gloria’s self-advocacy skills were instrumental in making sure she had good auditory access. In grade six, Gloria no longer receives direct or indirect service from a teacher of the deaf but continues to be monitored by the Learning Resource Teacher at the school. Gloria’s mother reports that she “felt incredibly well supported, [we had] more support than I knew what to do with. There were just people who were there, and I’m like, I don’t even know why you’re like here – I don’t even know how to make the best of this… there was so much, especially in the beginning…it’s overwhelming, but it’s been a positive experience.”

4.1.3 Home Language Environment

The primary language spoken in Gloria’s home is English because her father does not speak French. Gloria’s hearing mother is fluent in both English and French but she notes that her preference would be to do written activities in English. Originally from Quebec, French was the language spoken at childhood home and she attended a French language school. Gloria’s father is anglophone so English is spoken in the home between Gloria’s parents. Both Gloria’s parents

have lived in the anglophone community for many years prior to Gloria's birth and their primary friendships in the community are with anglophone people.

Gloria's mother has endeavoured to use French interchangeably with English in the home, sometimes repeating in French what she has spoken in English when her husband is present. She admits that she struggled to speak French first because she has lived in such an anglophone community over the past couple of decades. However, when possible, the mother explains she has been very intentional to move between French and English as much as possible: "consciously exposing her to language and willingly having conversations in front of her that involved vocabulary that you may not normally have with a child but you just want her to hear the words."

Gloria's mother explained that while she herself is not a teacher, she has leaned on her extended family, who are educators, and her home-visiting teacher, to implement various language development strategies (e.g., pre-teaching of vocabulary before a trip or an outing, selecting new books in both languages to develop vocabulary). She emphasized that pre-teaching vocabulary was key, commenting that, "We just tried to talk about vocabulary all of the time.". She also reached out to the support teachers regularly to learn about the strategies they were using in the classroom.

Gloria had many opportunities to practice French in the home and she also uses French to communicate with her cousins during their summer gatherings. She regularly meets with her grandmother over Skype and visits her seasonally. It was interesting to hear that Gloria has begun to teach her francophone grandmother how to speak English during their weekly Skype sessions!

Entertainment selected in the home has varied over the years. When Gloria was younger, the family managed to find a good selection of French programs for her to watch, but only as a concession to allowing television viewing at all. As Gloria's mother commented, "I find that I have to fight television for literacy." Although it can be challenging to find appropriate French language programming or movies, one series that was watched in the home was "Ladybug et Chat Noir". Even though there is an English translation, Gloria enjoyed it for many years in French. Gloria's mother reported that closed captioning is always on, but as Gloria got older, the viewing tended to occur in English to include Gloria's anglophone father in the activity.

4.1.4 Home Literacy Environment

Both Gloria and her mother were eager to talk about the literacy activities in their home. "Reading is huge in our household and more so than any other household that I've seen…not that there's a contest, but that I've seen in other families.". Based on the parent questionnaire, Gloria has more than 200 books of her own and visiting the library is a weekly activity. Reading habits were instilled with intentionality and began with the home visiting teacher's encouragement to read 10 board books a day, alternating between the two spoken languages. The mother shared that as Gloria aged, "I realized kids do what they see. And so, I said, 'That's it. We're having a reading hour and Mommy is reading'… And in the summer, we take a blanket out and both sit there and read for a bit and she's happy reading". When selecting texts that were a bit beyond her reading level, she described sharing the responsibility, reading aloud together, and discussing the text as they went along. She explained that some books lent themselves to be acted out and role playing turned out to be quite pleasurable, so much so, that Gloria requested it even when the texts were familiar and less challenging.

Weekend trips to the library allowed the family to cycle through a variety of French and English books. "[We would spend] Saturday mornings going to the library, getting a stack of books… and I tried not to limit how many she could bring home even if she couldn't get through all of them. Just let her, you know, explore it". Many popular English book series have French translations: "If I found a series that was good, I'd try to find them in French, so, the Babysitter's Club, Dork Diaries…and then we found the problem, she does not like the translations that are from France.". The translations that were done in France were less pleasurable to read because Gloria did not fully comprehend the unfamiliar colloquialisms. "The jokes don't line up, it's a different humour…the vocabulary, the expressions of surprise or anger are not the same and so, you lose your story because you're not understanding the exclamations." Gloria also mentioned this problem and explained that sometimes reading in French can be more difficult because, "instead of using Canadian French words, they use, European French…but usually I don't have that much trouble". To mitigate the unfamiliar words, Gloria relies on her mother for definitions and admits she also looks for word definitions on Google.

Gloria's mom decided that book selection in French, had to be done around Canadian authors or Canadian translations. She enlisted her brother to help her research the authors and the translators of book series. "We found Goosebumps that were in French, but by a Quebec translator". They were also successful in finding a series written in Quebec called "Juliette" which is available in both a romance novel and a graphic novel where a young girl follows her journalist mother on her travels around the world. "It rang true for our family because of my traveling and my work and [Gloria's] love of travelling". Even with the plethora of books on her shelf, Gloria enjoys re-reading a select group of books, "I find that she goes to the same books, and I know that's a comfort thing and that's a soothing thing…you know, have you read

something one time? You just kind of kind of process it, but then you read it a second time and you get it. And the third time you kind of get the nuances. And so, maybe that's what she's getting out of it. Every time she reads it, she picks up more about the language being used and the depth of the story?".

Even with the current trend towards digital resources, the family continued to purchase books specifically in line with Gloria's interest, age, and language development needs. When explaining the power of non-fiction books her mother said, "I know they can google things, but yeah, just having these books and flipping through it and finding out its vocabulary. But it's also like the peripheral information that comes from that. So, if you're interested in skeletons also you might be interested in the nervous system and the digestive system and, you know, the medical fields that are involved in all this stuff. So, the books cover the wider array. Whereas if you google something, you're getting Wikipedia, 'what is a bone?' definition and that's it. [With a book] you flip the page, there's more. Yeah. And then you find out that, okay, maybe it's not bones that you're interested in… then you're not so tunnel visioned into one thing…it's almost magical in the sense that even if you're not looking for something, you find stuff.".

With a strong passion for printed books and having been cautious about allowing Gloria to use smartphones and tablets, her mother expressed frustration at the reliance on digital platforms during the COVID lockdowns. "We had to reintroduce reading a little bit, just like make time for it and take away the tablet a bit more". She commented that with the digital platform, there's less magic in it and you are more likely to just find "ads". Books also provide images and small text and large text while also allowing a more robust research experience that can be shared. "Maybe I'll read something that doesn't interest her, but part of that information will get soaked in".

Both Gloria and her mother referred to her interest in creative writing. Gloria said she enjoys writing and finds inspiration through a collection of pictures that she keeps. She likes to write about her travels, and excitedly shared a project that she has been working on using the pictures from her recent trip to Africa. Her mother commented that "at one point we thought she was going to be a writer." Gloria did say that sometimes writing can be hard, but it's not the grammar or punctuation that she finds daunting, rather "it's just trying to get all of my ideas and putting them into one thing, a book, because sometimes my teacher says, like, one idea per sentence, so I try to do that."

4.1.5 Accommodations and Assistive Technology

Gloria's first experiences with personal Frequency Modulation (FM)[7] technology were at school. Teachers and administrators were extremely supportive of the programming directed by their itinerant teacher of the deaf. As part of the transition to school, the homevisiting teacher of the deaf introduced the family to the French consultant from the francophone provincial school. As part of the consultant's programming, she met with both the family and the school in the months before school started. Gloria's mother recalled that this teacher-consultant created a special book about the school for the purpose of exposing Gloria to the development of vocabulary and routines connected to the school setting. FM systems and strategies for the classroom were shared with the classroom teachers and used with diligence. Her mother told a story about how Gloria was coached to request that the FM system be used, therefore, from an early age, she had the vocabulary and responsibility for her own access, a powerful self-advocacy tool.

[7] Frequency Modulation (FM) technology refers to a system used to help a person with hearing loss listen in noisy places, such as a classroom. There are two main parts of this system - a microphone and a transmitter unit worn by the person speaking (e.g., the teacher).

Gloria said that she enjoys and looks forward to group activities where she uses a pass around microphone that is connected to her FM system. Successful use of the FM system prompted her parents to request to borrow it for use in an after-school summer camp. Since then, the school has allowed Gloria to borrow the FM system regularly over the summer holidays and on weekends understanding that it improves her listening access during extra-curricular activities outside of school such as skiing. The feedback from the instructors has been that Gloria is the only child in the group who is following the instructions because she has such great access when they are using the FM technology. However, now that Gloria is in grade six, her mother recognizes what may be coming. "We know that we are getting to that age where it's, you know, that resistance, and the 'I don't want to be different'."

At home, the family implemented whatever accommodations were necessary. While Bluetooth technology may be available for her hearing aids, Gloria does not yet use this technology to connect to phones or other audio-equipment. Television viewing was always done with closed captioning on, (i.e., in French or English depending on the program). These parents noticed another benefit to the closed captioning alongside the access was that it supported an increase in her lexicon by allowing her to recall new vocabulary as she was simultaneously hearing and seeing the words. The mother commented that the closed captions provided a better access for listening and when interpreting foreign accents.

4.1.6 Language and Literacy Achievement

Gloria was assessed over four days so that the focus was on one assessment measure per visit. To become comfortable with each other and with the testing procedure, testing began with the English version of the CELF. Over three consecutive visits, we completed the testing using the French version of the WIAT, followed by the English version of the WIAT and finishing with

the French version of the CELF. Gloria preferred to read passages from both versions of the WIAT aloud, but always checked to see if it was permitted: "Est-ce que je peux lire à haut-voix? Parce-que ça m'aide, comme, rappeler de l'histoire." [translation: May I read it aloud? Because it helps me, like, remember the story.] When listening for directions in the 'Following Directions' subtest of the CELF (e.g., Point to the first square then point to the last X) or matching words from a list in the 'Word Classes' subtest (e.g., books, porch, library, cave), Gloria listened and did not repeat the prompts aloud.

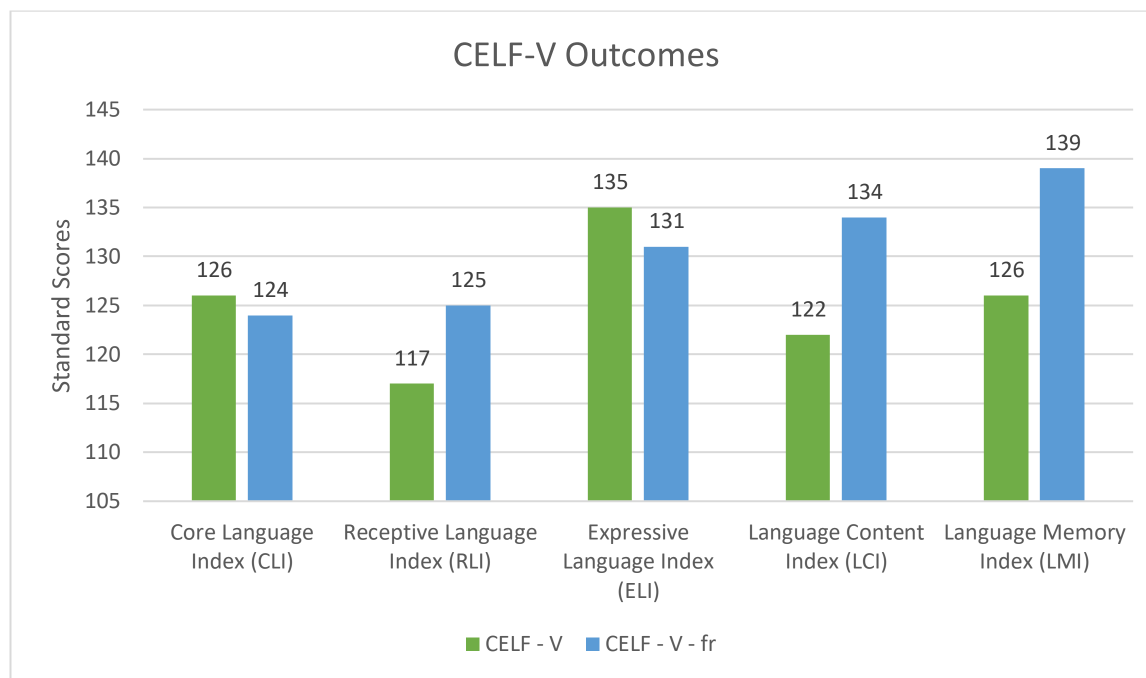
During each visit, Gloria confirmed that her hearing aids were working and she sat across the table from me in a quiet space in the family home where the listening environment was good. We paused periodically to take movement breaks and at each visit, we shared a special drink. Except for the first meeting, assessments were scheduled over her summer holiday so that she would be fresh and able to attend to the testing.

4.1.6.1 Language

All standard scores in Gloria's Core Language were significantly above the mean in both versions of the CELF-5. Scores fell in the *above average* range between 117 (i.e., Receptive Language Index) and 135 (i.e., Expressive Language Index) in English (see Figure 4.1). Both the Core Language Score and the Language Memory Index Standard Score were 126, well above the high *average* of 115. In French, Gloria's language for academic subjects, all standard scores were above the mean or higher, between 124 and 139 with her highest score being Indice de la mémoire du langage [Language Memory Index].

Figure 4.1

Gloria: CELF-V Standard Scores

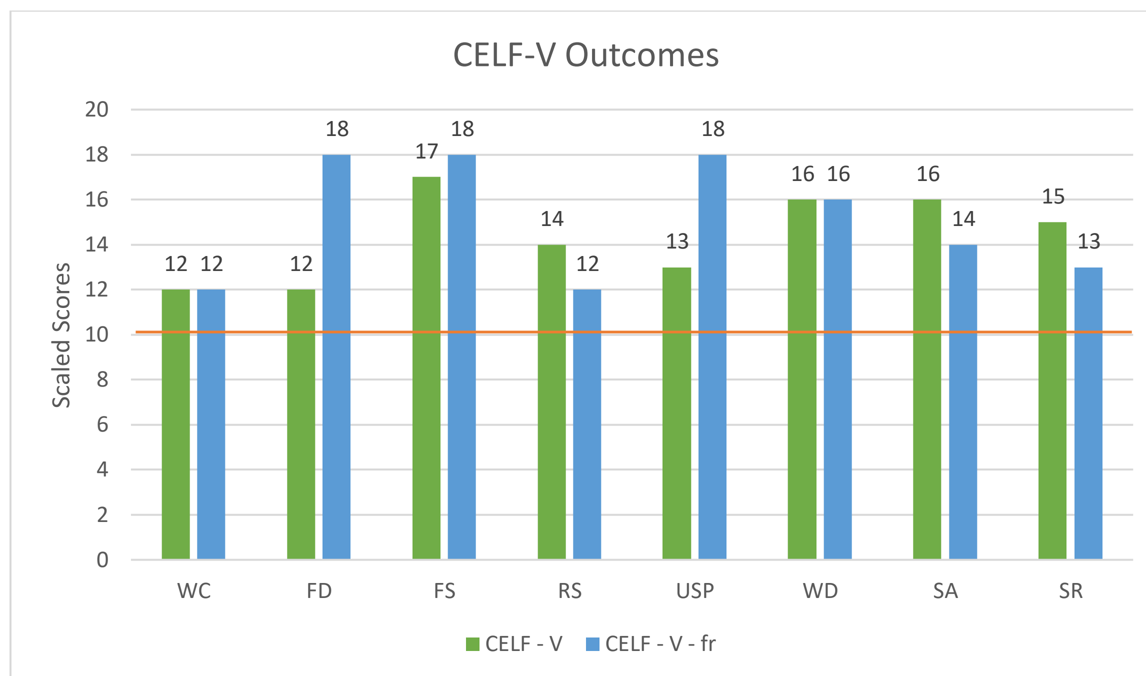


Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada

To break down the scores into the subtests, a graph with the scaled scores was created (see Figure 4.2). The scaled scores illustrate that Gloria's language skills are comparable in both languages. The most significant spread in scaled scores is in the Following Directions subtest with a 6-point difference. In English, her score is in the average range (i.e., 12) and in French her score is above average (i.e., 18). When French scores were higher than English (i.e., Following Directions and Understanding Spoken Paragraphs), the difference between the two languages was greater than or equal to five points.

Figure 4.2

Gloria: CELF-V Scaled Scores



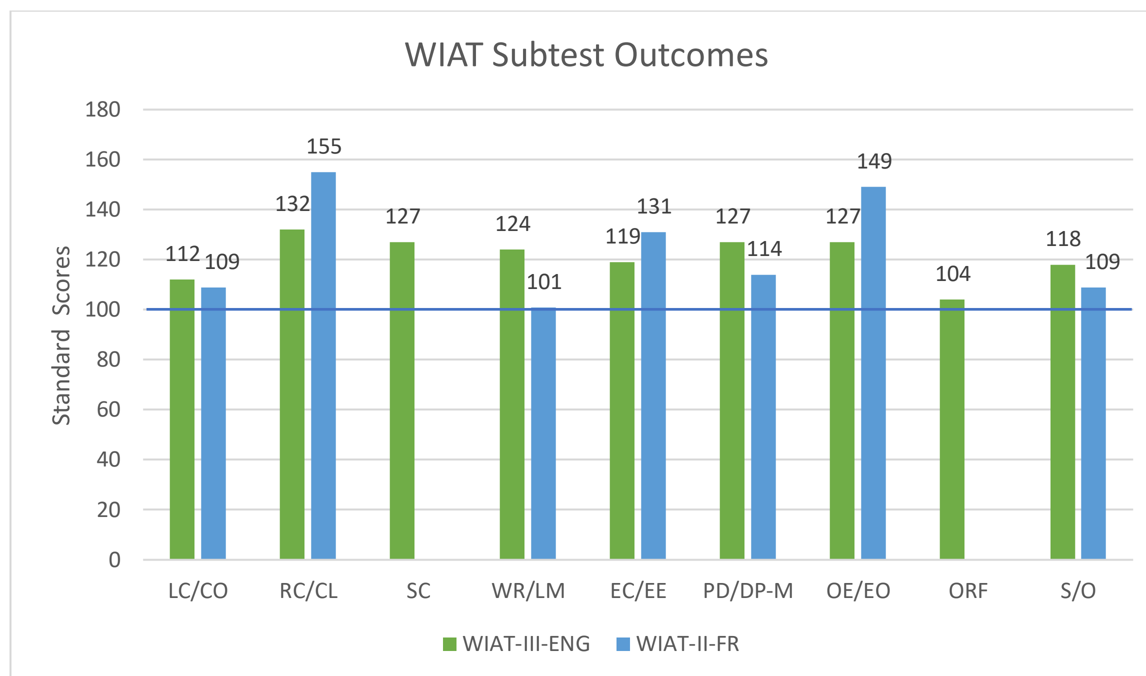
Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada, WC = Word Classes, FD = Following Directions, FS = Formulated Sentences, RS = Recalling Sentences, USP = Understanding Spoken Paragraphs, WD = Word Definitions, SA = Sentence Assembly, SR = Semantic Relationships

4.1.6.2 Reading and Writing

Both versions of the WIAT covered achievement across four domains: Listening, Speaking, Reading, and Writing. Gloria's standard scores in all subtests were above the mean for both the English and French versions of the test (see Figure 4.3).

Figure 4.3

Gloria: WIAT Subtest Standard Scores



Note. WIAT III-ENG=Wechsler Intelligence Achievement Test III English, WIAT II – FR= Test de rendement individuel de Wechsler deuxième edition version pour francophones du Canada, LC = Listening Comprehension, RC = Reading Comprehension, SC = Sentence Composition, WR = Word Reading, EC = Essay Composition, PD = Pseudoword Decoding, OE = Oral Expression, ORF = Oral Reading Fluency, S = Spelling, CO = Compréhension orale, CL = Compréhension de lecture, LM = Lecture des mots, EÉ = Expression écrite, DPM = Décodage des pseudo-mots, EO = Expression orale, O = Orthographe

All English subtest outcomes were above high *average* (i.e.,115) except for the Listening Comprehension Score (i.e., 112) and the Oral Reading Fluency (i.e., 104) which were above the mean (i.e., 100) and within the *average* range. In spoken language, Listening Comprehension was in the high end of the *average* range with a standard score of 112 and Oral Expression was in the *above average* range with a standard score of 127.

Reading scores in English indicate *above average* ability with Reading Comprehension (i.e., 132), Word Reading (i.e., 124) and Pseudoword Reading (i.e., 127) in the *above average* range. Oral Reading Fluency, an additional subtest in the English version, indicated a standard score above the mean of 104, but 20 points below the other reading subtests.

Writing scores in English indicate *above average* ability with a range of standard scores from 118 in Spelling, 119 in Essay Composition, to 127 in Sentence Composition, a subtest only available in the English version of the test.

The scores on three of the French subtest were in the *très supérieure* [Very superior] ranging from 131 to 155, while three additional subtests were in the *moyenne* [*average*] range from101 to 109. In spoken language, Compréhension orale [Listening Comprehension] was in the *moyenne* [average] range with a standard score of 109 and Expression orale [Oral Expression] in the *très supérieure* [very superior] range with a standard score of 149.

Reading scores in French indicate *moyenne* [average] to *très supérieure* [Very superior] ability with Compréhension de lecture [Reading Comprehension] at a standard score of 155, Lecture des mots [Word Reading] at a standard score of 101 and Lecture des pseudo-mots [Pseudoword Reading] at a standard score of 114.

The two subtests providing outcomes for writing in French indicate high *moyenne* [average] to *très supérieure* [Very superior] ability with standard scores of 109 in Orthographe [Spelling] and 131 in Expression écrite [Essay Composition].

4.1.6.3 Summary

Outcomes for Oral Expression in both languages are well *above average/très supérieure*, but of note, the outcome in the French version is a standard score of 149, 22 points above the English score. The standard score for Reading Comprehension is in the high range of *above*

average in both languages, yet extremely high with a standard score of 155 in French. Word Reading in French (i.e., 101) is much lower than her score in Reading Comprehension. There is less difference between Gloria's standard score in English Reading Comprehension and Word Reading, with standard scores of 132 and 124 respectively.

4.1.7 Uncorrected Writing Samples

Gloria's uncorrected French writing sample "Si j'étais présidente" was consistent with her score on the WIAT-II-CDN-F evidencing strong writing skills for her age (see Appendix I). The sample is a persuasive piece written to convince her peers that she would be a good student council president. The introductory paragraph contains three general promises and in the body of the work, Gloria provides a good thesis statement. She includes additional details to elaborate while infusing humour in a concluding statement about her goal to make school fun while promising that she will be different from previous presidents. The piece demonstrates her strong use of voice and aptitude in using well-structured grammatically correct sentences.

During the interview, Gloria described being taught to write with a directed plan from her teacher on Google slides, "put your body on here…subject, characters, what the characters are like". She prefers to have more freedom with her creative writing, including details about the characters and setting and capturing storylines exactly as she imagines them. Without an English writing sample, it is difficult to comment on her English creative writing except to say that with English being the majority language and her joy of writing, an English creative writing piece would likely corroborate her above average standard score in Essay Composition in English.

4.2 Emerson's Story

Emerson is a sixteen-year-old boy finishing the tenth grade. He has a prelingual progressive profound hearing loss and wears bilateral cochlear implants. Emerson was diagnosed

with a hearing loss at 4 months of age, began wearing hearing aids at 5 months, but only received his cochlear implant at age 4 prior to entering Kindergarten. His language development was significantly delayed and his mother explains that this was due to his progressive hearing loss and limited access to spoken language through hearing aids. From the beginning, Emerson's mother worked hard to implement auditory-verbal therapy lessons.

Emerson's mother reported that by grade two, his language had become age appropriate and he was speaking in both French and English. This is also reflected in a rating of 8 on the Categories of Auditory Performance-II (CAP-II) and 5 on the Speech Intelligibility Rating scale (SIR) in both languages, indicating a high level of performance on each of these rating scales. By Grade 3, Emerson was identified with additional exceptionalities, including an idiopathic growth delay, giftedness, Attention Deficit Hyperactivity Disorder (ADHD), a writing disability, and Autism Spectrum Disorder (ASD) (see Table 4.2).

Table 4.2

Emerson: Demographic Data

Age/Grade	16 years, grade 10
Gender	Male
Additional Exceptionalities	Attention Deficit Hyperactivity Disorder, Giftedness, Idiopathic Growth Delay, Writing Disability, Autism Spectrum Disorder
Degree of hearing loss	Bilateral profound sensorineural
Personal Amplification	Bilateral cochlear implants
Parents' first language	Father – English; Mother - French
Educational setting	English-language high school
CAP	English = 8; French = 8
SIR	English = 5; French = 5

Emerson has very good access to speech through the cochlear implant technology. At the time of the interview with his mother, Emerson wore only one cochlear implant because the battery had been dying quickly in the other one. He was seated several feet away from his mother at his own computer facing her back and occupied with his own material. Even in a less than ideal listening situation, he was able to consistently overhear and provide comments when he was being spoken about. His mother even commented that he overhears speech much better than expected from a deaf child, but that "he listens only when he wants".

Emerson has a strong command of language in both French and English, along with a quick wit. He speaks in an academic register, defining words, and playing with language to impress. An example of this was seen during administration of the WIAT. The WIAT requires the student to list as many nouns in one particular category as possible in 60 seconds. Emerson's responses with respect to basic nouns in the category were typical for his age, however Emerson also included several unexpected responses and proceeded to explain them once the timer went

off. For example, he was interested to know if I was familiar with the term “guêpe ichneumon”. It's a parasitoid wasp…it’s a type of wasp. Parasitoid wasp. If you do not know what a parasitoid is … I interrupt him and respond, “It means it goes inside.” He counters, “No, that’s parasitism. This is a bit more gruesome. Parasitism is more or less coexisting with your host and Parasitoid is taking that a bit more extreme. You might want to search ichneumon up.”

Emerson enjoys playing with words and declared: “I love grammar. I love correcting people”. Although the length of time required to complete the standardized assessments was challenging for Emerson, especially due to his ADHD, he was intrigued by the task. He would provide answers or definitions that were phrased in such a way so that his answer was correct but not one of the required responses for the test. For example, when he was defining ‘mustard’, he wanted to define the plant and provide a scientific description even though it was clear that the intention was the condiment. I had to remind him to focus on defining the intended meaning of the word to get full marks, instead of providing the scientific definitions.

Word study interests Emerson. When asked to create sentences with a jumble of words, he joked, “In the legendary words of Yoda, ‘fix that with glue, could you?’”, and commented, “he [Yoda] has a tendency of switching them up.” His motivation to play with language seems to work alongside his bilingualism. As his mother stated during the interview. “What I've heard is that learning more than one language is actually forcing your brain to do more. More manipulation, more switching, which makes it more able to…do some interesting things.” She also noted that it is very interesting to assess Emerson but to “be aware that his level of vocabulary was really, really high in both languages the last time he was tested” and therefore, the testing time would be long.

Emerson believes himself to be a perfectionist and is aware of the ways that his ADHD affects him. He says that sometimes the need to get something perfect has affected his motivation to do the work. However, this is not particularly related to one language over the other. He also maintains that his ability to read English and French have remained equal: "Depending on the country I'm in…. I go to France every now and then too, so it's more or less, it's more or less an automatic switch from English or French without really realizing it not… Not because I like more one than the other. It's just because availability issues."

Emerson has had the opportunity to try a lot of different activities but is most interested in science. He has tried theatre, sports, and tutoring where he has learned to help other children. As a teenager, Emerson has taken sailing lessons and continues to attend summertime specialty camps. After one of our assessment visits, he was headed to a two-week overnight camp for children with ADHD.

4.2.1 Early Intervention

Emerson was identified with hearing loss through the Infant Hearing Program and was initially provided with auditory-verbal therapy in French from 5 months of age. Once the family moved to southern Ontario, he continued with auditory-verbal therapy through an anglophone community therapist until age 6. The family opted not to receive services from the provincial home-visiting program. Emerson's mother explained that she was single-minded in her approach to communication with Emerson and had the perspective that the French provincial school program was too focused on implementing manual communication (i.e., signed language) approaches for her liking. She also explained that initially, she was given weekly French auditory-verbal service through the hospital and felt that this was sufficient. Emerson's mother explained, "I had taken the decision to go for oral with my son and really focus to make sure I

was spending enough energy into French and English. Because it was a challenge, and I knew I could communicate with him (…) so I didn't really want anyone reminding me that it [sign] was an option. You know, like I was just trying to focus. And I'm still like that."

When Emerson's mother returned to work and study, Emerson was enrolled in an English daycare part-time at 18 months but transitioned to full-time French daycare at 30 months until school entry. Emerson's mother noted that prior to his transition to school, they continued to received support from their anglophone community auditory-verbal therapist as well as the anglophone parent's group through the organization called Voice for Hearing Impaired Children (VOICE).

4.2.2 Choosing Bilingualism

Although they were living in a bilingual area of the province, it was the case that they had the option of services in either French or English, but not both. From birth Emerson's family had been advised they needed to select one language for him and services would be provided in that language. They selected French, as this is Emerson's mother's first language, while also considering the desire to keep her extended family connected to Emerson through spoken French.

Once the family moved to southern Ontario, French was already Emerson's first language and therefore, the family easily made the decision to enrol Emerson in the French minority school. Also, his mother believed that she would be better able to support him academically in French. While his mother recognized that supports may be more limited in the French schools, she believed that the school board would do their best to accommodate him. She admitted that moving him out of the French system was always going to be an option if supports were unavailable. The French immersion schools were not known to have the special education

personnel he might need and she believed that children with additional exceptionalities were generally not welcomed in French immersion programs.

However, Emerson did move to the French immersion program in grade six. His mother explained that in grade three, Emerson began to have issues with writing, prompting an assessment by an educational psychologist. The results indicated that he was gifted with a writing disability. The French Minority school board did not know how to support learners with writing disabilities. As Emerson's mother explains, "they didn't know what to do. They were trying to come up with some recipe that was not making sense and… I could not blame them… they were just really trying with the amount of things that they had."

While the English school board had more support for Emerson's writing disability, the options for French were Core French or French immersion. Considering Emerson's French language abilities, the decision was made to enrol him in the French immersion program where he would receive instruction primarily in French and still have access to once-a-month support from a specialist within the English board system. Therefore, when Emerson was entering grade 6, the family transferred him to the French immersion school in the English school board. They were able to bring the technology purchased with the provincial monies with them including a sound field system, a personal FM system, and a computer.

At the time of the data collection, Emerson's mother explained that they had since received a diagnosis of ADHD but had not found an effective prescription which could be used due to his growth disorder and Emerson continued to struggle with self-regulation. She also shared that he has a diagnosis of Asperger's Syndrome. This additional exceptionality was evident during the testing as Emerson had great interest in sharing large quantities of accurate information about random topics. This additional diagnosis prompted another move, and in grade

nine he was moved to the English high school because it was where he had more options for additional support and programming.

4.2.3 Home Language Environment

Emerson comes from an exogamous home where the mother is bilingual, speaking European French and English, and the father, also bilingual, speaks English and Tagalog. His paternal grandparents live in their community and speak English and Tagalog. His maternal grandparents live in France and speak only French. Emerson's siblings attend French minority schools and are bilingual. Emerson's mother reports that her sister-in-law and some other family members live and work in French communities which is nice because when they get together, they can speak some French. In addition, she describes meeting "some other French from France. And little by little…we now have a group of friends that are francophone, but mainly Français French." She explained how nice it is when one particular friend visits as it "nourishes" Emerson's French language skills.

Emerson is a French/English simultaneous bilingual; from the beginning Emerson was exposed to both English and French but with his mother as the primary caregiver prior to school entry, French was his primary spoken language as a toddler. The family always intended for Emerson to learn both English and French in case they moved back to France, and also as his mother's family do not speak English. During the interview, Emerson's mother acknowledges that her primary comfort level in literacy activities is in French. She related that communication between herself and Emerson, both in face-to-face language and in text, continues to be done in French. On the parent questionnaire, she responded that currently, French is spoken about 40% and English about 60% of the time in the home. During our interactions, Emerson explains that

due to his transition into the English high school and being surrounded by English, he tends to lean towards spoken English more than spoken French.

During one of our incidental conversations, Emerson explained that when he was young, immersing himself in English was the challenge. “I'd say that my English interaction was very limited up until I switched schools… I know that my interactions with people, with my limited interactions outside of school. And at home. With my dad…I have a brother and a sister. I didn’t have them when I was young. My brother was one when I was five. So, I didn’t have any, you know, [immediate siblings], and I didn’t have anyone who really communicated [in English with me]. I communicated mostly in French because that’s what I was, you know, immersed in.”

4.2.4 Home Literacy Environment

Emerson’s mother became enthusiastic when asked to talk about their literacy practices in the home. At this point in our Zoom call, she walked me over to her library of books and commented that she was “a hoarder” even though she had tried to downsize their collection. The problem was that she was unwilling to part with the French books. “I keep the French. I cannot separate from the French!”. When asked to describe the ways that she and her husband promoted literacy in their home, Emerson’s mother said, “I read to him since he was a baby, writing, probably less, I would say, because I’m not a big writer myself either.” While saying this she laughs to herself and then shares that she is currently doing a lot of writing for her job.

We have always had a lot of books around the house and “I read to him every day.” She described how in the beginning of his language development; she would occasionally use an English book but would tell it like a story in French. To follow up, her husband would read the same English book to him, but read it verbatim, in English. She concluded: “So there was always a lot of books, a lot of reading, a lot of storytelling …around the house.”. With European French

being her first language, and subsequent exposure to Ontario French, this family did not report issues with finding French books for Emerson. They confirmed that, in the home, most of the reading was done in French because of the saturation in access to English story time and English print outside of the home. However, Emerson's mother also bought English books when they were "really cute" or "made a good point", for example, she bought books that had storylines to help with working on self-regulation skills.

4.2.5 Accommodations and Assistive Technology

Emerson's mother believed that the school board had been extremely supportive in providing the appropriate hearing technologies in the classroom and that he had received robust direct service support for his hearing loss during those first five years of school. The learning resource teacher had always been available and had kept up with his listening needs, being sure the accommodations for this part of his profile were attended to by the classroom teachers. However, by grade three, the needs that Emerson presented with in class were beginning to be more firmly related to his additional exceptionalities. By grade six, Emerson was moved to the French immersion school where he could receive more support for his writing disability. By grade nine, he was moved to the English high school because it was there where he had more options for additional support and programming.

To illustrate Emerson's perspective on his learning accommodations, here is part of a transcript from our interview where he explains how he has used assistive technology.

Melanie: Did you use any assistive technology?

Emerson: Computer. And that's about it. Read and write was never fun with me or, you know.

Melanie: Yeah.

Emerson: I would have to go back and correct 50% of my work, which is annoying.

Melanie: Oh, yeah. What about FM systems?

Emerson: FM systems were a staple.

Melanie: And the teachers used them well?

Emerson: Yep, Well, they used them. Because they're really easy to use. I don't know how you can use them poorly. Other than forgetting to turn them off when you're not in class or when you're not speaking with me. Because occasionally a teacher would give a hint to one of the students that was really struggling, and I'd just be like, I'd redo the page that they gave a hint on. (laughs)

Melanie: Yeah, no kidding. A little, under the table learning on your part.

Accommodations during his extra-curricular activities such as sailing are equally important. He has had the opportunity to receive lessons through a sailing program designed specifically for persons with disabilities, and the instructors are eager to provide any type of accommodation that is required (e.g., the FM system). Emerson and his mother both confirmed that closed captions are always used for accessing media, and they both believe that it provides better access for everyone. He also uses the Bluetooth function in his cochlear implants for streaming audio content or to talk on the phone.

4.2.6 Language and Literacy Achievement

Emerson was assessed over four days in order to focus on one assessment measure per visit. Emerson’s mother arranged for us to meet in locations that would be convenient for everyone, therefore, we often met in public spaces. During the first three visits we were seated next to each other in a quiet environment to administer the French version of the WIAT, followed by the English version and then the English version of the CELF. During the administration of the French version of the CELF, there was a significant level of background noise, however,

Emerson did not feel that there was a need to move because, he insisted that the directional microphones on his cochlear implants were selecting my voice over the noise. As a strategy, he would repeat back my question or the list of words I had presented to ensure he had heard them correctly.

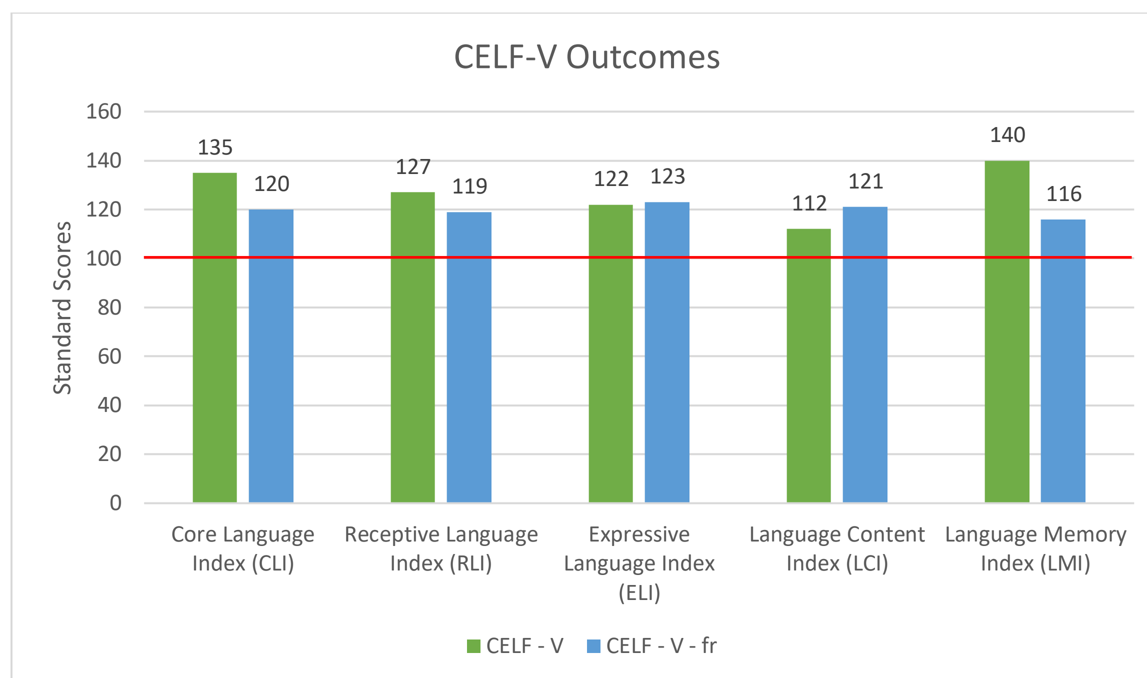
Emerson chose to read the texts silently when possible. When one subtest required timed readings and Emerson admitted that his "times" were "all over the map". He encountered one text in the French version of the WIAT that required a second reading to understand the meaning of it. When it was time to complete any written portion of the assessment measures, Emerson was reluctant and made special requests: "am I allowed to use your computer without auto correct?" We did not make any accommodations during the WIAT-II-FR in terms of using speech to text or a computer. Emerson wrote his responses in the response booklet. We did not complete the essay writing portion of any assessment, but rather, Emerson shared some drafts of things he had been working on. It was noted that even though Emerson struggles with the writing process, if given the scribing support, he is able to produce a very comprehensible piece of text.

4.2.6.1 Language

All standard scores on the CELF-V were significantly above the mean in both English and French (see Figure 4.4). Scores fell between 112 (i.e., Language Content Index) and 140 (i.e., Language Memory Index) in English, with the Core Language Score and the Receptive Language Index Standard Score in the high average range at 130 and 127 respectively. In French, Emerson's home language, all standard scores were also well above average (i.e., between 116 and 123) with his highest score being Indice de langage réceptif [Receptive Language Index].

Figure 4.4

Emerson: CELF-V Standard Scores

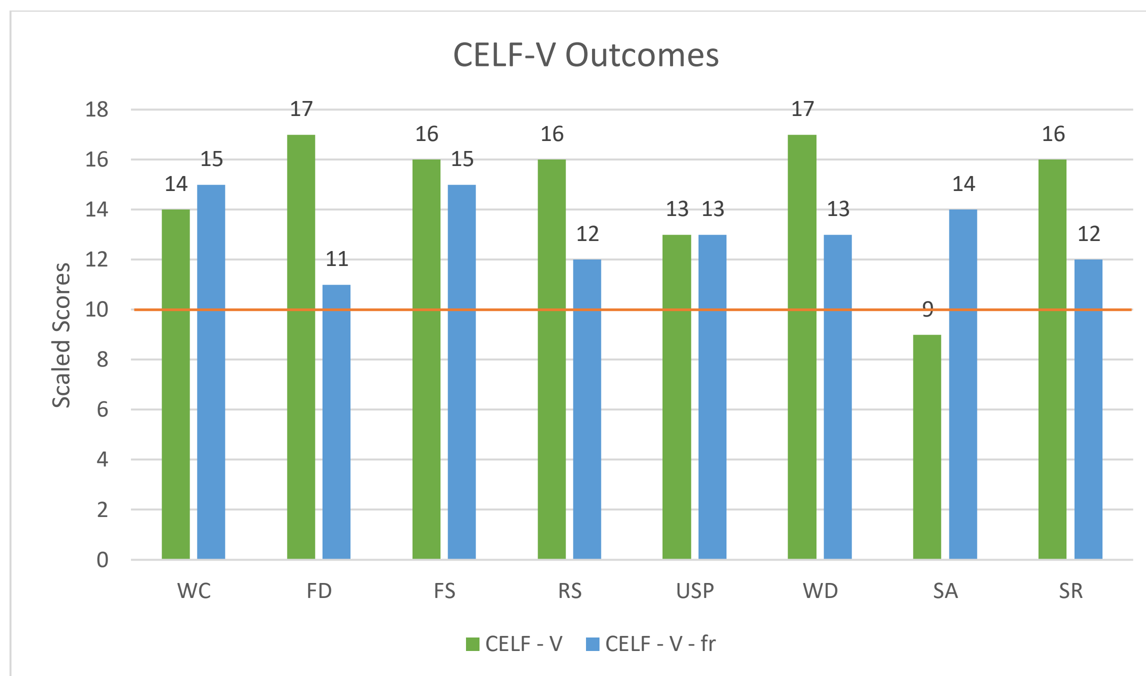


Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada

When comparing scaled scores (see Figure 4.5), performance is within or above the average range (i.e., 7 to 13) and similar in in both languages with the greatest difference in the Following Directions subtest where there is a 6-point spread between English (i.e., 17) and French (i.e., 11). Twice, French scores are higher than English scores with (i.e., Word classes and Sentence Assembly).

Figure 4.5

Emerson: CELF-V Scaled Scores



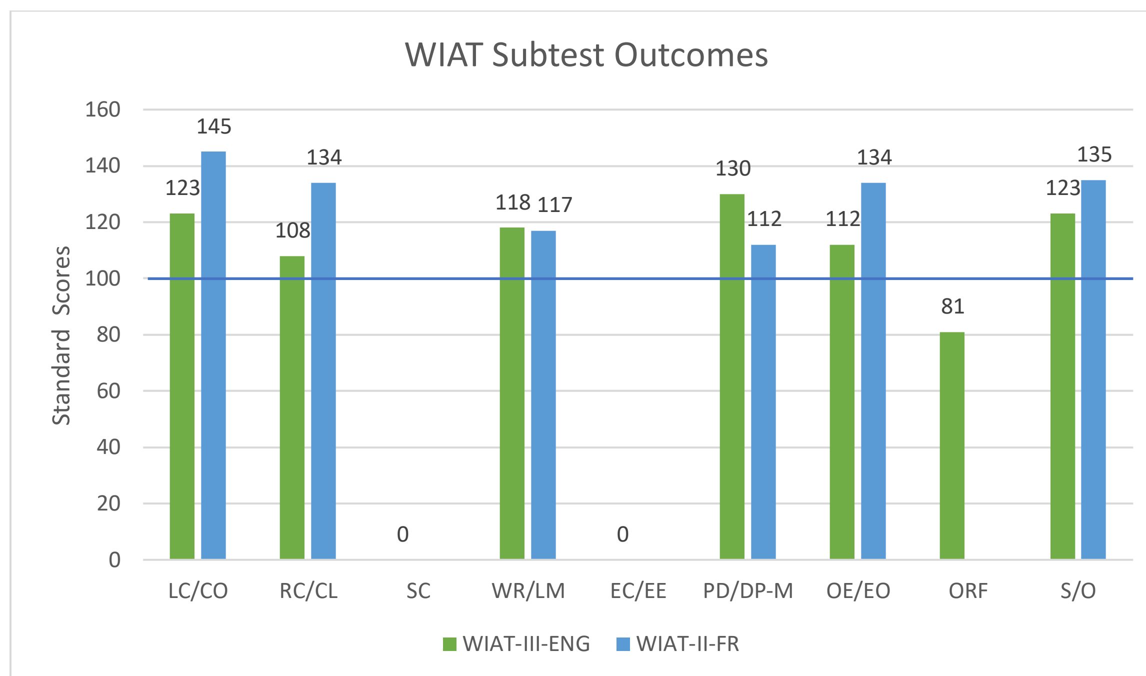
Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada, WC = Word Classes, FD = Following Directions, FS = Formulated Sentences, RC = Recalling Sentences, USP = Understanding Spoken Paragraphs, WD = Word Definitions, SA = Sentence Assembly, SR = Semantic Relationships

4.2.6.2 Reading and Writing

On both versions of the WIAT Emerson completed three of the four domains: Listening, Speaking, and Reading. The writing subtests were not included due to his writing disability. Emerson's standard scores in all but one subtest were above the mean for both the English and French versions of the test (see Figure 4.6).

Figure 4.6

Emerson: WIAT Subtest Standard Scores



Note: WIAT III-ENG=Wechsler Intelligence Achievement Test III English, WIAT II – FR= Test de rendement individuel de Wechsler deuxième edition version pour francophones du Canada, LC = Listening Comprehension, RC = Reading Comprehension, SC = Sentence Composition, WR = Word Reading, EC = Essay Composition, PD = Pseudoword Decoding, OE = Oral Expression, ORF = Oral Reading Fluency, S = Spelling, CO = Compréhension orale, CL = Compréhension de lecture, LM = Lecture des mots, EÉ = Expression écrite, DPM = Décodage des pseudo-mots, EO = Expression orale, O = Orthographe

All English subtest outcomes were above the mean or in the *above average* range except for the Oral Reading Fluency (i.e., SS of 81). In spoken language, Emerson's score for Listening Comprehension was in the *above average* range with a standard score of 123 and Oral Expression was in the *average* range with a standard score of 112.

Reading scores in English indicate *average* ability with Reading Comprehension (i.e., 108), but with Word Reading (i.e., 118) and Pseudoword Decoding (i.e., 130) in the *above average* range. Oral Reading Fluency, an additional subtest in the English version, indicated a standard score below the mean of 81, more than 25 points below the other reading subtests. Writing scores in English were unavailable, however, Emerson completed the spelling subtest with results in the *above average* range (i.e., 123).

Four of the French subtest outcomes were well above the *très supérieure* [very superior] range with standard scores from 134 to 145. One subtest was at the *moyenne élevée* [high average] (i.e., Lecture des mots [Word Reading]). Décodage des pseudo-mots [Pseudoword Decoding] standard score was 112, in the *moyenne élevée* [high average] range, but well above the mean. In terms of spoken language, Compréhension orale [Listening Comprehension] was in the *très supérieure* [very superior] range with a standard score of 145 and Expression orale [Oral Expression], though 9 points lower, was still in the *très supérieure* [very superior] range with a standard score of 134.

Reading scores in French indicate *moyenne élevée* [high average] to *très supérieure* [very superior] ability with Compréhension de lecture [Reading Comprehension] at a standard score of 134, Lecture des mots [Word Reading] at a standard score of 117 and Décodage des pseudo-mots [Pseudoword Decoding] at a standard score of 112. Emerson participated in the Orthographe [Spelling] subtest with a *très supérieure* [very superior] standard score of 135.

4.2.6.3 Summary

Scores demonstrate that while Emerson can confidently use English for Oral Expression, his expressive language is significantly stronger in French where his results were stronger than in English. Similarly his Reading Comprehension scores are higher in French (i.e., très supérieure)

in French (i.e., 134) than in English (i.e., average). Scores in Word Reading and its counterpart in French, (i.e.,Lecture des mots) were almost equivalent at 118 and 117 respectively. One area where English was stronger is in the area of Pseudoword Decoding (i.e., English at 130 and French at 112).

4.2.7 Uncorrected Writing Samples

Emerson did not provide any writing samples in French or English; however, he provided images of the plans he had developed for a creative writing piece in English (see Appendix J). The plan listed minute details about the characters (e.g., name, gender, pronouns, squadron, physical description, position), details about three scenes (e.g., a clear sunny day) and the "dilemma" (e.g., illegally carrying an aid package and letter) all with correct spelling in his own legible script. By examining his two pages of plans for this narrative, clearly Emerson has a good story sense and the ability to purposefully plan, developing detailed original and well-developed outlines including vocabulary options.

Given his reluctance to write, Emerson was given the opportunity to dictate a story while I scribed. This passage below was written in response to the prompt, "Tell me about your favourite game."

> *My favourite game is Under Falling Skies. I like this game because it tests my spatial awareness, with ships coming down at my base, my resource management abilities, with the use of dice I have to place and the amount of health I have left, and my ability to strategize on the fly, with the mothership descending every round, giving me a maximum of 13 turns and the fact that I can't control the outcome of the dice. Those are reasons I enjoy playing Under Falling Skies.*

Emerson provided an introductory sentence, a clear description of the three parts of the game that he likes and why he likes them, and a concluding statement. The language that he generates is in a register appropriate for written language, demonstrating that he knows how to frame his argument effectively.

4.3 Rebecca's Story

Rebecca is a serious and reserved 16-year-old, grade 11 student attending a French high school. She has prelingual, bilateral severe (left ear) and moderate to severe (right ear) hearing loss and has worn her hearing aids consistently since diagnosis through the Ontario Infant Hearing Program. Unlike the other students in this study, Rebecca began learning French upon her enrolment in the maternelle "Kindergarten" program at age 3 (see Table 4.3).

With amplification, Rebecca describes her access to speech as "comfortable" though she prefers to see the speaker's face when communicating. She was rated 7 on the CAP-II rating scale in English as she struggles at level 8 (i.e., following conversation in a reverberant room or where there is noise, such as a classroom or restaurant) and rated 6 in French (i.e., understands conversation without lip reading) noting that phone conversations in French would be more of a challenge. When talking about her hearing loss, she comments: "[my hearing aids] carry me through the day… I definitely know that I hear less than you do, and other people do, I definitely know that. Without them [hearing aids], I hear like whispers, basically… even if you're yelling, they'll be very, like, toned down. Yeah, so like, I can't hear any, like sharp 'rs' or anything like that." She continues: "I mean, I wish I could have experienced like, actual hearing, but then I've just been like this my whole life. I don't really know anything different, so it's not like it's a huge loss to me. I feel like if I, if I had the, the original quality of like, hearing through my own ears,

then I'd be more devastated about having to wear hearing aids. But now, I just like, it's not, I've never experienced that, so I have nothing to compare it to."

Rebecca is rated a 5 on the SIR rating scale for speech intelligibility because her speech is intelligible in both French and English, however, she admits that sometimes her French teacher does not understand her. Rebecca feels that the issue with the occasional misunderstandings in face-to-face communication is due to her expressive French skills explaining that: "sometimes when I hear people talk it's that I wouldn't have phrased it like that, but it makes sense, but I wouldn't have phrased it like that… It's probably they are naturally French and I am not.".

Table 4.3

Rebecca: Demographic Data

Age/Grade	16 years, grade 11
Gender	Female
Additional Exceptionalities	None
Degree of hearing loss	Bilateral Moderate-severe (Left) to Severe (Right) sensorineural
Personal Amplification	Bilateral hearing aids
Parents' first language	Father –French; Mother - English
Educational setting	French-language school
CAP	English = 7; French = 6
SIR	English = 5; French = 5

When explaining the success that she has had learning two spoken languages, Rebecca asserts, "One thing about me though, I can hear pretty well with my hearing aids, like, without them I'm not, but like, I don't think, like, without the two hearing aids, I don't think I could do the two languages… I think it's 'cause I hear so well with my hearing aids". However, throughout the interview, Rebecca returns to the thought that French is more difficult for her: "it's not my first language. I like French, but I don't love it. I mean, I'll keep it. Like, I actually

switched to English for grade nine, but then I switched back for the French. So, I really, like, appreciate it and I'll keep it. I just prefer the English because I don't know the conjugation in French, it's hard and it's kind of complicated. And I also don't have like that expansive of a vocabulary in French, so I won't understand everything they're trying to say.". She relates that some of her high school teachers are from France, and "their accent is a bit thicker. I can't understand them quite as well…so, I definitely connect to the Canadian, French better".

Recognizing that even though her French proficiency is not that of a native speaker, she prefers attending the francophone school. She explains: "You know, I did the English school like for one year. It wasn't really comparable though, because it was a much bigger school. They would be paying a lot less attention to you versus like [school name] which is a very small school. So, the teachers are more like, paying attention to you only... My Math and Science was not very good in English, but my French and English were great. And History, like everything else besides that was great…I like the French, I'll keep it because or else I would not be bilingual if I do not practice it here. At all. I think it's kind of worth it." But there are still aspects of French that elude Rebecca, even after this much time in a francophone academic setting. Somewhat frustrated with herself, she explains: "I really like reading in English [as opposed to French]. I don't think anything is hard." [not even textbooks?] – "No. I understand. My vocabulary is very extensive in English."

All extracurricular events that Rebecca has participated in over the years have been offered in English, the majority spoken language of the community. Although her circle of friends from school all speaks French in and outside of school, Rebecca admits that spoken English seems to be the default. When she was younger and went out on playdates, some of her friends were from more French-speaking families and the play occurred in French. Over the

years, many extra-curricular sports were offered with the school and in those cases, Rebecca would be speaking French with her teammates. Some of the parents and families who attend the tournaments would also be speaking French.

However, it is likely that English is also simultaneously being spoken at these tournaments as schools meet to compete with one another. Rebecca's father recalls meeting other francophone families from his hometown while at volleyball tournaments. "We bumped into each other watching volleyball and, you know, have a little chit chat… it's funny because I'm more comfortable in English. But and I've always known them growing up in [names hometown] and working, speaking English. [Friend's name] is very French and so she'll always start a conversation off in French. And I'll kind of start in French. But because it's not very fluent with me, I would resort to English. And she'd get a clue, and like, 'this is English now'. But yeah, it's just my insecurities when it comes to French". Despite French being spoken at some extracurricular activities, English tended to dominate.

Rebecca has participated in various sports lessons over the years from swimming to skiing, with English spoken for all these activities. Her father recalls trying soccer out with her. "We thought, okay, she'll have an advantage with this FM system, I can communicate with her…when it comes to swimming lessons, she has to take her hearing aids out…so she needs to read your lips or [you need to] speak loudly". Her English skills were strong enough to participate even when access was not ideal.

Rebecca's father doesn't believe that she is a good self-advocate. He interrupted a skiing lesson one day when Rebecca wasn't quick enough to tell the instructor about her hearing loss and access needs. Rebecca says: "He did it for me before I got the chance to!". When asked about challenging listening situations, she explains: "I'll ask people to repeat themselves". But her father

counters: “I think pride just sometimes gets in the way…so sometimes, maybe we’re just being overprotective parents, we want to make sure she gets the best that, you know, that she can get out of it [the lesson]. It’s up to us to say, okay, she needs hearing aids, and she can’t hear you very well so speak up!”. They laugh together when recounting these situations.

Rebecca has career aspirations that include a route through university. She imagines that Speech Pathology might be an interesting path and is determined to study French at the post-secondary level.

4.3.1 Early Intervention

Rebecca’s family received audiological services and speech and language therapy for their daughter through the hospital following the identification of her hearing loss. A teacher of the deaf from the Provincial home-visiting program provided bi-weekly support beginning around age one until school entry. Early intervention seemed to provide the family with the understandings they needed to make communication decisions in a timely fashion, so that Rebecca could develop language alongside her age-mates. During the early years, she attended auditory-verbal therapy sessions with community speech language pathologists.

When asked about early intervention, the father described learning about the sounds that Rebecca would struggle to hear and how to make listening easier for her with her hearing aids. He described being “more mindful of that when it came to learning speech” and “we would kind of address it and we emphasized those S-words so she can hear them properly.”

4.3.2 Choosing Bilingualism

Although French was not typically spoken in the home, the family made a deliberate decision to explore the various French schools in their area because of their belief that bilingualism is an asset in the Canadian context for employment purposes. While touring the

public schools in the area, they found that the French minority school could offer them many resources. Rebecca's father describes deliberately including French in their home life around the time that there was a decision to send her to the French school. "Knowing that school was around the corner, we started naming things [in the home in French]."

In deciding to send Rebecca to a French minority school, her father recalls some reservations being expressed by the early intervention team. The family understood that Rebecca would already be at a disadvantage because of the hearing loss and wondered if learning a second language would add too much of a challenge. Rebecca herself believes deaf learners "should be able to learn different languages, not just English or just ASL or whatever". She admits that it worked well for her because "I can hear pretty well with my hearing aids".

At the school level, the itinerant teacher "did play a big part in this French learning and listening skills in school. She's kind of like a resource teacher that would come maybe once a month". The school also provided an in-house resource teacher. During the interview, Rebecca's father reflected, "With all the resources that the school was able to provide for [Rebecca], I think she got the most help in school learning how to speak French – [more] than of all three [of our] kids because of her hearing loss." He continued, "I think that's why [Rebecca] does so well in French and in school in general, because she had that strong one to one, you know?"

4.3.3 Home Language Environment

Rebecca grew up in a professional exogamous family. Her father is of francophone heritage and grew up in one of the larger bilingual Northern Ontario communities but considers himself an anglophone. The expectation that he would speak French exclusively with his children was never there, he explains: "it's not a natural language for me." While his extended family spoke French, English had become the primary language of communication in his

childhood home. He explains, "My French isn't all that great and it wasn't really reinforced all that much in school. The only time I actually spoke French was when I did communicate with the teachers, which I avoided doing, like a lot of student kids. Amongst friends, we always spoke English. At home we spoke in English… Having said that, I did have some friends that were mostly French and spoke French at home...Their parents spoke French and you had me forced to speak French, but that was Northern Ontario. Down here, [in Southern Ontario], not so much."

Rebecca's mother is anglophone having taken the required French as a second language courses in the Ontario school system. Rebecca's mother has worked hard to improve her French despite the limited opportunities to use it in Southern Ontario as she views bilingualism, particularly learning French in Canada, an asset. Once Rebecca began school, she focused on improving her own French to help her with schoolwork. When given the option for completing interviews and questionnaires in English or French, Rebecca's parents chose to conduct all oral and written exchanges in English.

Given this context, apart from intentionally labeling objects and using a few key phrases in French, the language used in the home was primarily English. Rebecca reminds her father that he has one aunt who lives in B.C. who has visited and spoken French around them. "I think she was a French teacher at some point. So, her French is very refined. We don't really speak all that often; she came to visit years ago and knew that [the kids] were in French schools so she made an effort to speak French to [them]." When asked about entertainment in the home, the father shared that the majority of their video entertainment was in English with "the odd time the [other kids] like to watch a movie in French, because that's what they're doing in class at school, but not very often." Overall, the spoken language in the home reflected the community outside the home. Rebecca admits that her exposure to French in the home has been quite limited.

4.3.4 Home Literacy Environment

Rebecca and her father both expressed positive attitudes towards reading and writing. Rebecca shared that, "When I read, I feel, I feel immersed in a different world. Very happy. Creative…creative, happy relaxed, imaginative…I really like fiction. I like just going into, like another, just something that the authors created. Not necessarily real." They both said that they have always made regular visits to the library, "a couple of times a week", as was encouraged by their home-visiting teacher, and this practice continues. Rebecca's mother has always been an avid reader and her husband believes that it was her influence that helped Rebecca develop such a keen habit of reading and writing.

Rebecca explains that she selects books based on authors she has read before. She prefers to read in English, as the community library has a greater selection in English than in French. When asked if she ever reads in French, she says, "I used to as a kid. I used to read a lot in French for, like, pleasure. Like I used to read these little fairy books…not anymore". However, through her high school academic French courses, she describes recently finishing a book about the most recent "Me Too" movement and another book: "*Ainsi parle le seigneur*… it was a murder mystery. Had something to do with religion. There's a detective in there, you know, it's pretty typical. You know, detective, your witness…to suspects and killers. Yeah, I think it was pretty interesting. Typical though." She describes occasionally using the Google search engine to figure out the meaning of words or slang phrases when encountering them for the first time "or maybe I'll even ask the teacher."

When it comes to writing, Rebecca admits she writes for fun in both journal and story writing. "I prefer writing over, like, saying things because I can, like, choose how I want to place my words but when you're saying things you have to, like, you only have one chance to say it.".

When writing a story, she explains that she tries "to figure out like, who the characters are, who they are in relation to each other, how many there are, like what they look like. Maybe find some adjectives I can, like, describe them with. I'll try to figure out, like the plot of my story, how I want it to end first so I can, like, direct it over there to try to figure out like, exactly like the different, the different events they want to have happen in my story."

With respect to writing in both languages, Rebecca explained that "I learned to write essays in French first but more in-depth in English. Like in grade 9 you are taught about essays but not that much. Grade 10 is like where you really get into it. And I think I had my French class before my English class last year. Like first semester and English second semester." She felt that the focus of her French class continued to be reading comprehension, vocabulary development and language with a lot of reading and responding to questions and less essay writing. English class focused more on the essay writing and the format around that.

She went on to explain that the instruction in her French class was not robust enough for her to use in her English classes, so she would apply what she has learned in English to both classes, and she now has a better understanding of the process. "I do remember the French teacher gave me some like, like a structure for the essays. But um, and I remember following it, but it didn't really stick with me. Like when I'll write an essay now, I won't follow that. And then we learned… we did other stuff in French class like we watched this the show and had to answer questions about it and we read this novel, had to answer questions about that. But it wasn't all about essay writing [in French class] when in English it's a lot about writing. And yeah, we do a lot of essays in English."

4.3.5 Accommodations and Assistive Technology

Rebecca recognizes she accesses language best when using her hearing aids and appears baffled when she meets other deaf learners who do not use theirs properly. At a recent school gathering of deaf learners, Rebecca noted: "no one was even wearing their hearing aids. Like not even [girl's name]. No. Like I was there and I was like 'are you joking?'… I'm like, 'you can choose not to wear these? Like I can't get by a day without wearing these."

Though it was offered to her, Rebecca chose not to use the additional hearing assistive technology (i.e., FM systems) at school, around grade seven. Her father explained, "We struggled a little bit with the FM systems and tried to choose which one was the best one for her and nothing really seemed to suit her very well." When the itinerant teacher of the deaf would ask about the FM system, the family would admit that Rebecca had chosen not to use it. "She doesn't like it… she's always kind of pushing back and resisting it". The family shared that they tried to use the FM system when Rebecca played extracurricular soccer but even in this setting, "she didn't like it". At the school level, "They offered so many different devices to help her along with, I guess, ability to listen". By the time she was old enough to complain about the additional attention and support, she was "getting good grades" and the family allowed Rebecca to direct her own listening supports.

The family was always thinking about Rebecca's access to language. "One thing we have adopted since Rebecca was very little was putting on the closed captioning on TV." When asked to approximate when they started using closed captioning in the home, he replied, "Since almost the very, very little, anyway, since you [Rebecca] can read. Yeah, we always, I wouldn't say we've become dependent on it, but we certainly notice when it's not on. Yeah. And it's funny when, so when we're at work and the TV happens to be on, there's no closed captioning… and

there's a lot of ambient noise and you can't even hear what's going on… you're trying to watch a TV program and it has no closed captioning. So yeah, we become reliant on it. It's weird how that kind of happened."

Using a Bluetooth connection to watch television or connect to other technology has not been possible with the hearing aids that Rebecca currently uses. The family describe a streamer that she has for her current hearing aids but Rebecca describes being frustrated by listening to the stream alone which causes her to miss out on the incidental conversations in her surroundings when tuned into technology. As mentioned, even in the classroom when paired with an FM system, she rejected the technology and as her father explained:

> "When it came to the FM systems, which she was explaining when it came to Bluetooth as well, whenever the system would kick in and she would be listening to the teacher it would block out everyone, everyone else. So, she would miss the conversations that were happening around her with her friends, and so she'd be left out of all the conversations. She didn't like that. It isolated her in that respect. Yeah. And so, we explained that to the, you know, to the hearing aid dispensers. And they said, well, they can change the setting too so they can have that ambient surround sound going on. But it wasn't the same. She was still missing out on all that overhearing conversations, you know, conversations that were going on. And so, she felt like she was missing out. So, from that point of view, we didn't realize that she's socially being affected by it. So, if she doesn't want that FM system, I get that."

Without the use of an FM system to access spoken language in noisy environments such as classrooms or restaurants, Rebecca say she uses speechreading and other communication repair strategies for accessing conversation (e.g., asking for repetition). Admitting that restaurants are

noisy, Rebecca insists that she enjoys eating out with her family. “They’re loud, but I enjoy myself.” Swimming lessons and skiing lessons have proven to be possible because of Rebecca’s resiliency in figuring out what she may miss by lipreading.

4.3.6 Language and Literacy Achievement

During our assessment visits, Rebecca preferred to be seated across the table from me with her back to the large glass door in the family’s kitchen to avoid backlighting and ideal access to speechreading. We met over four days to administer one assessment measure per visit beginning with the English versions of the CELF and WIAT, followed by the French versions of the CELF and then the WIAT. When we first met, Rebecca was cautious and reserved, posing many direct questions about the reason for my study and primarily speaking in English. By our second visit, she noted that she was enjoying our time together and we compared many interesting perspectives about our individual bilingual educational experiences. During the reading portion of the WIAT, Rebecca used the read aloud strategy. She commented: “I find I read it faster when I read it aloud to myself”. And when she finished reading the passage she exclaimed: “A lot of big numbers that I couldn’t pronounce in French!” to explain stumbling over some of the passage.

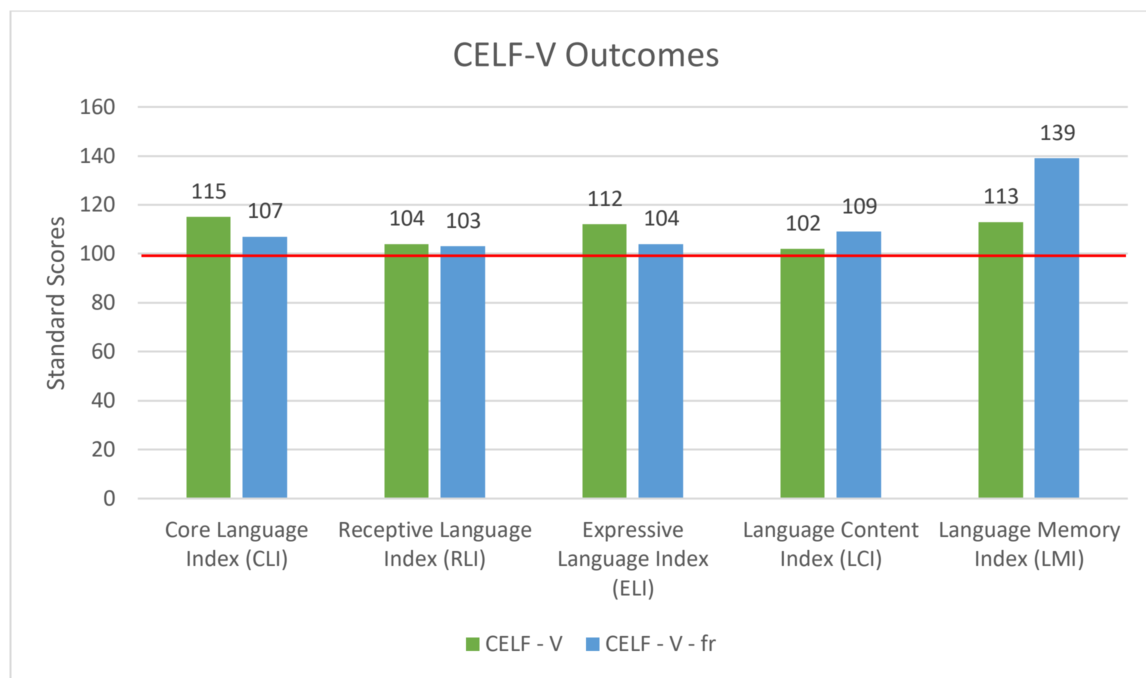
Even though she read aloud to be able to better focus on the text, when she searched for information in the text, she did so silently and with ease. Interestingly, in both languages, Rebecca also did not repeat directions aloud to herself when completing the ‘Following Directions’ subtest (e.g., “before you point to the square on the left side of the circle, point to the triangle and the X”) or the ‘Word Classes’ subtest of the CELF, but listened silently and pointed to the images or selected the word pairs without thinking aloud.

4.3.6.1 Language

All standard scores on the CELF-5 were above the mean in both English and French (see Figure 4.7). Standard scores fell between 102 (i.e., Language Content Index) and 115 (i.e., Core Language Index) in English with the Language Memory Index and the Expressive Language Index Standard Scores were at high end of *average* at 113 and 112 respectively. In French, all standard scores were once again above the mean with her highest score being Indice du mémoire de langage [Language Memory Index] at 139.

Figure 4.7

Rebecca: CELF-V Standard Scores

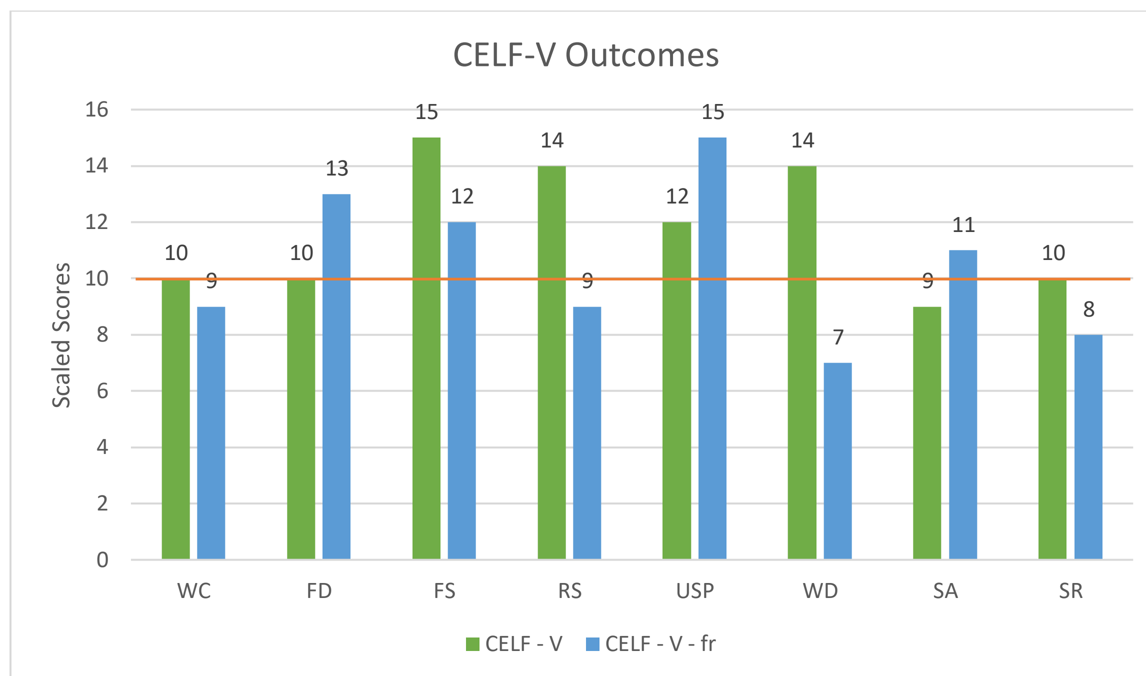


Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada

When comparing scaled scores, in some subtests her English skills are stronger (e.g., Formulating Sentences) but in other subtests her French skills are stronger (e.g., Understanding Spoken Paragraphs). For the most part, the languages are comparable with the only outlier being the Word Definitions subtest with a 7-point difference in English (i.e., 14) compared to French (i.e., 7).

Figure 4.8

Rebecca: CELF-V Scaled Scores



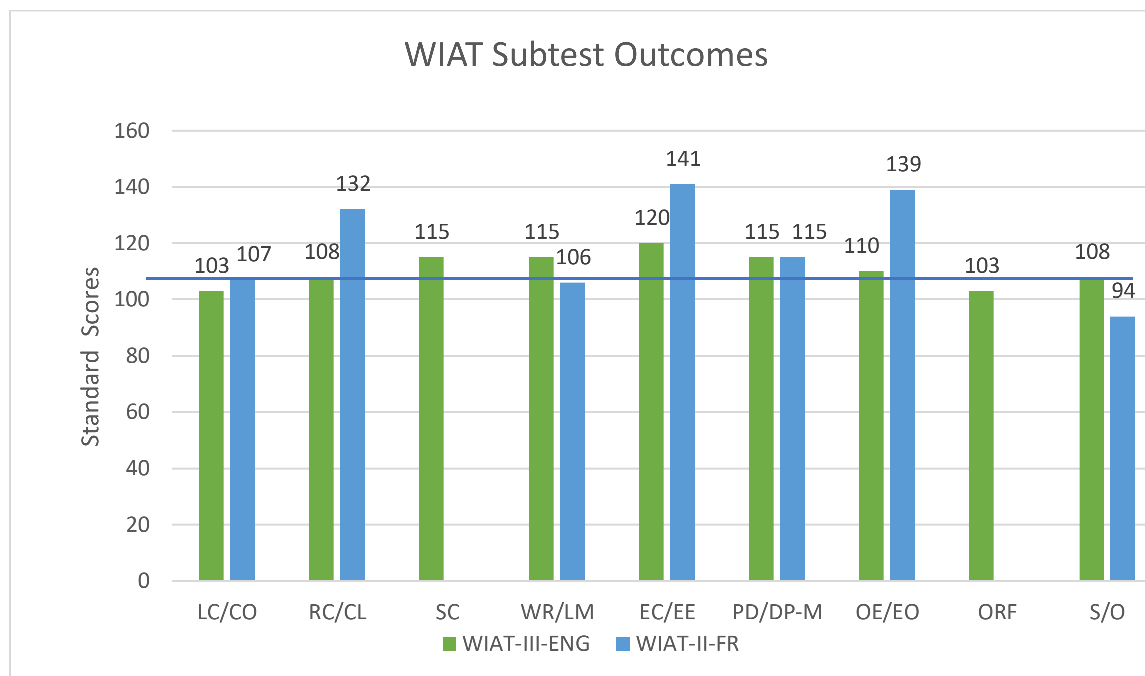
Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada, WC = Word Classes, FD = Following Directions, FS = Formulated Sentences, RC = Recalling Sentences, USP = Understanding Spoken Paragraphs, WD = Word Definitions, SA = Sentence Assembly, SR = Semantic Relationships

4.3.6.2 Reading and Writing

Rebecca's scores in all English subtests, and all but one in French, were above the mean (i.e., 100) (see Figure 4.9).

Figure 4.9

Rebecca: WIAT Subtest Standard Scores



Note. WIAT III-ENG=Wechsler Intelligence Achievement Test III English, WIAT II – FR= Test de rendement individuel de Wechsler deuxième edition version pour francophones du Canada, LC = Listening Comprehension, RC = Reading Comprehension, SC = Sentence Composition, WR = Word Reading, EC = Essay Composition, PD = Pseudoword Decoding, OE = Oral Expression, ORF = Oral Reading Fluency, S = Spelling, CO = Compréhension orale, CL = Compréhension de lecture, LM = Lecture des mots, EÉ = Expression écrite, DPM = Décodage des pseudo-mots, EO = Expression orale, O = Orthographe

All subtests in English were in the *average* range with scores ranging between 103 and 115. One score, Essay Composition, was in the *above average* range (i.e., 120). In spoken language, Rebecca’s scores on the two assessments (i.e., CELF/WIAT) aligned with all in the

average range (i.e., Receptive/Listening Comprehension at 104/103, Expressive/Oral Expression at 112/110 respectively).

Reading scores in English indicate *average or above average* ability in all areas (i.e., Reading Comprehension at 108; Word Reading at 115; Pseudoword Decoding at 115; Oral Reading Fluency at 103). Writing scores in English also indicate *average* to *above average* ability with a range of scores from 108 in Spelling to 120 in Essay Composition.

Three of the scores French in French were well above the *très supérieure* [very superior] ranging from 132 to 141, while three were in the *moyenne* [average] to *moyenne élevée* [high average] range, ranging of 106 to 115. One score (i.e., Orthographe [Spelling]) fell below the mean with a standard score of 94, but was still in the *moyenne* [average] range. In spoken language, Compréhension orale [Listening Comprehension] was in the *moyenne* [average] range (i.e., 107), but Expression orale [Oral Expression] was at the *très supérieure* [very superior] range (i.e., 139).

Reading scores in French indicate *moyenne* [average] to *très supérieure* [very superior] ability with Compréhension de lecture [Reading Comprehension] at 132, Lecture des mots [Word Reading] at 106 and Décodage des pseudo-mots [Pseudoword Decoding] at 115.

The two subtests for writing in French indicate *moyenne* [average] to *très supérieure* [very superior] ability with scores of 94 in Orthographe [Spelling] and 141 in Expression écrite [Essay Composition]. Spelling may have been easier for Rebecca in an essay where she had control over her choice of words. This may explain the 47-point difference across the two writing subtests.

4.3.6.3 Summary

While outcomes for Oral Expression in both languages are in the above and high average range, it is worth noting that performance in French version was higher with a standard score is 139 (i.e., 21 points above the English score of 110). The standard score for Reading Comprehension is in the high range in French (i.e., 132), but in the average range for English (i.e., 108). Lecture des mots [Word Reading] in French is 106 which seems low considering Rebecca's strength in French Reading Comprehension. Décodage des pseudo-mots [Pseudoword Decoding] scores were identical in French and English (i.e., 115). Overall, Rebecca's scores indicate significant comparable strength across languages, but with French, the language that she uses primarily in the academic setting, being the stronger of the two.

4.3.7 Uncorrected Writing Samples

Rebecca provided two uncorrected writing samples (see Appendix K). The English essay was a writing assignment for her grade 12 English class examining a literary work, Kate Elizabeth Russell's *My Dark Vanessa*. Rebecca's introductory paragraph names the author and title of the novel and introduces the theme of sexual harassment. Against the backdrop of current events in the #MeToo movement, Rebecca employs a 'compare and contrast' style to develop a compelling argument, contrasting the victim and the abuser in the novel to high profile abusers from recent current events (i.e., Epstein's story). She uses correct spelling, punctuation, and grammar conventions while including quotes from external sources to strengthen her argument about the #MeToo movement and references recent news articles (e.g., *The Standard*).

The French writing sample, "Cuisson #1 – *Guide alimentaire canadien* – bols de pita" is a two-page recap about a cooking event that Rebecca participated in for her nutrition class. Rebecca uses nutritional terms (e.g., les grains entier [whole grains]) and medical terms (e.g., la

tension artérielle [blood pressure]) appropriately to explain the selection of various vegetables for their healthy meal. Following the conventions of a short report where she references the *Canadian Food Guide* (i.e., *le guide alimentaire canadien*), Rebecca opens with a clear introductory sentence, going on to describe the task in detail through the body of the work, concluding with a statement about healthy habits in which the group set aside their cell phones to enjoy their meal in each other's company.

Both pieces of writing were age-appropriate containing strong structure and voice. Even though she learned to write essays in French before English, she comments that she learned "more in-depth in English" and believes that her writing has been influenced by writing instruction in both languages.

4.4 Nigel's Story

Nigel is a prelingually deaf seventeen-year-old boy with a mild sloping to moderate hearing loss in one ear and mild sloping to severe hearing loss in his other ear who wears bilateral hearing aids. The oldest of two children, he has attended a French minority school since kindergarten and in his grade 11 year at the time of the data collection. He has always used his hearing aids consistently, and according to his mother this is "because he was… so young and then he wore hearing aids at such a young age. And he was always so good with them that we never had an issue with him wearing them". Throughout the recorded interviews and data collection sessions, Nigel's ability to switch between languages was seamless, however, for incidental conversations, English was used. His ratings on the CAP and the SIR are 9 and 5 respectively, indicating performance at the highest level in both languages (see Table 4.4).

Table 4.4

Nigel: Demographic Data

Age/Grade	17 years, grade 11
Gender	Male
Additional Exceptionalities	None
Degree of hearing loss	Bilateral mild-moderate (L) moderate-severe (R) sensorineural
Personal Amplification	Bilateral hearing aids
Parents' first language	Father – English; Mother - French
Educational setting	French-language school
CAP	English = 9; French = 9
SIR	English = 5; French = 5

Nigel does not appear to favour one language over the other, selecting the language to use depending on his conversational partner, as he acquired both languages simultaneously from his early years. During the interview, Nigel listened as his mother described her interactions with him at hockey and how they occurred in English. Everyone on the team knew that his mother spoke French and it was something to be valued. His mother described how she believes her kids are aware of the uniqueness of their linguistic skill set. "I remember when the kids were little. Well, even now, it's fun sometimes to be out in public and you want to say something…we can say it in French. And they don't know what we're saying, right?... It's kind of our own little secret language. I think you just kind of get used to the fact that and instead of seeing [being francophone in an anglophone environment] in a negative way, we kind of see it in a positive way. Like we have something that they don't. Right? And I know over the years, like even with like him at hockey, I speak to him in French and I don't care if his teammates are there. And usually people are just so impressed to see how fluently he could just switch. Right? So, it's kind of a that's something we have that you don't." As his mother shared this anecdote, Nigel listened

to his mother's response and nodded in agreement, making it clear that he was also proud of his ability to speak two languages and believes it to be an asset; something that his anglophone teammates do not have.

Nigel seemed confident that he is equally balanced in his skills with speaking and reading in both languages. He doesn't believe that he struggles more in French and reports that, "My [French] teacher actually told me that, I think we were reading a text and this was one of the first classes, and she said that my comprehension skills were pretty good, like better than most students."

From a very early age, Nigel had a keen interest in hockey and began rollerblading around the house with a hockey stick in hand. He began playing community hockey at about 4 years of age. Outside of the home, other than the English he was speaking with his father, this was his first exposure to speaking English. Nigel's mother explains how she managed the English sports programming, particularly if the listening environment was not ideal: "Whatever the instructor would say, when he was really young, I would translate to him in French…I'm pretty sure he understood, but I just felt the need to speak to him in French anyways".

Now that he is older, he admits that most of his activities outside of school are in English, for example, his father is the coach for his U-18 hockey team, therefore, the interactions all occur in English. Nigel also works at a local golf course and the interactions on the green all occur in English, and when he was taking driver's education and completing the driver's test, this was done in English. He has a broad musical taste for his age and listens to English more than the French artists. He is learning to play the drums and would like to be part of a band. It is likely that these interactions outside of school provided Nigel with the practice in English to become so proficient when both his education and primary home language are French.

4.4.1 Early Intervention

Nigel’s mother reports that he began receiving visits from a teacher of the deaf when he was less than a year old through the provincial home-visiting program. Initially this was with an anglophone teacher, but after moving to their new home in Southern Ontario, these were with a bilingual teacher of the deaf and home-visiting sessions continued for another year. The family was then demitted from the program because Nigel was successfully acquiring both languages at an age-appropriate level, and as such he did not qualify for any speech and language or auditory verbal therapy sessions.

The audiologist was the mother’s initial point of contact for receiving the diagnosis of Nigel’s sensorineural hearing loss. As his mother recalls, “I remember when [Nigel] was diagnosed with his hearing loss, the audiologist had told me that he may not be able to learn two languages and that I may have to sacrifice French for just speaking to him in English.” I remember being told, “Well, you know, because his hearing loss and the speech and the sounds and it might be harder for him’ and I'm glad I didn't listen because obviously it didn't; that didn't make a difference.”

The teachers of the deaf seemed to be the only individuals who worked regularly with Nigel, based his mother’s recollections. “He didn't qualify for auditory verbal therapy because of the level of his hearing loss”, but it is likely that Nigel was monitored, if only briefly, by the community speech and language pathology services. Children in Ontario were generally assessed on an annual basis using standardized tests such as the Peabody Picture Vocabulary Test, but his mother did not have any recollection of this or documents to share.

Nigel’s mother did track his development using the Nippising District Developmental Screening checklist, readily available online, to make sure he was meeting milestones. She said it

was likely that he did not receive any additional direct service from a teacher of the deaf upon school entry because he was meeting all developmental milestones including language. Once enrolled in kindergarten, a teacher of the deaf consultant came periodically to support the school staff in the appropriate use of the hearing technology including Nigel's personal FM system. Regular teacher of the deaf support was not deemed necessary.

4.4.2 Choosing Bilingualism

Despite being told that focusing on one language would better guarantee Nigel's ability to learn spoken language, his mother felt passionate about giving spoken language bilingualism a try. "The audiologist had told me that he may not be able to learn two languages and that I may have to sacrifice French for just speaking to him in English. And I was crushed, and I was like, There's no way. Like, what do you mean? Like, he should be able to learn two languages and And I was like, well, I'm going to do it until they tell me I can't, or until he tells me that he can't – right?

One of the reasons that Nigel's mother wanted to participate in this study is because she recognizes that 17 years ago, as family, they were pushing the limits of what was recommended to them by the audiologists and other early interventionists. She explains her view of the hearing loss in the early years. "I want to say I didn't pay any particular attention to the fact that he was hearing impaired, but it wasn't anything that really that I focused on. It was just more, okay, well, he needs to talk. I need to teach him how to speak and speak properly. And so that's just kind of what we did. For me, it just it wasn't natural to speak to him in any other language".

Both parents recognize the value of being bilingual in a bilingual country and spoken language bilingualism (i.e., French and English) was always the goal. Nigel's mother shared that when Nigel was an infant, they strategically relocated within southern Ontario. "We even moved

to the area where we moved to…knowing that there was a French school. And I guess the reason was more like, that's my first language and French is important to me. And I was at home at the time, with him. And so, his first language was also French, or predominantly, because he was with me most of the time."

Considerations for Nigel's future, in terms of employment opportunities, were also part of the family's decision to send Nigel to the francophone minority school. "In the long run too, like for myself included…I have a job because I speak French so, I wanted to be able to give him that same option, of two languages." But their decision wasn't met with immediate support, particularly by some early intervention service providers. "I remember when Nigel was diagnosed with his hearing loss, the audiologist told me that he may not be able to learn two languages and that I may have to sacrifice French for just speaking to him in English. And I was crushed. And I was like, 'There's no way', 'what do you mean?', 'he should be able to learn two languages!"

Nigel's mother resolved to teach him French "until he tells me that he can't", while maintaining a realistic attitude. French immersion was never considered as an option for Nigel, as his mother had taught in that system and had reservations about the French language proficiency of some of the teachers. "I taught French immersion for many years, and I knew that the people teaching French immersion – these guys [her children] are speaking better French than they are. So, I didn't want that for them."

4.4.3 Home Language Environment

Nigel has grown up in an exogamous home where his mother speaks primarily in French and his father speaks exclusively in English. Nigel's mother grew up in a bilingual community in Northern Ontario and communicated in French both at home and at school learning English as a

second language. Nigel's father is an anglophone and does not speak French. The family live north of a large Ontario city in one of the anglophone suburban areas. Living in this community and with spoken English in the home, there was never any concern that Nigel would learn to speak English as well as French.

Nigel's mother explained that when the children were growing up, she took her role as the French language model seriously. "I'm speaking to them in French and French only, and even at the dinner table like [husband's name] would be there. But when I spoke to the kids or they spoke to me, it was in French only." She also acknowledged that her life experience advantaged them and she knew how to engage meaningfully in French language play. "Maybe my background allowed me to do certain things that I, I don't even know if I did them consciously, but to make sure that he developed his speech properly."

Nigel's mother described how her children would code switch between parents even when discussing the same topic. She went on to explain that once the kids were older, they tended to speak English more as a family to include their father in all exchanges, always reverting to French when the father is absent. When the maternal extended family visit over the holidays, or Nigel's family travel north to spend a couple of weeks with grandparents in the summer, everyone "try to be considerate and speak in English…. but we can't help it. We end up always switching and speaking French. So, whenever the kids are around [my parents] it's never English.". Nigel explained that he also speaks in French primarily with his cousins even though they can all speak English. With friendships, he relates that "outside of the classroom, [we speak] more English [but] when we're in class, at school [it's French]".

His mother reflected on the pleasure they get from having their own language to switch to in public; his teammates are used to her speaking to him in French and, "usually people are just

so impressed to see how fluently he could just switch". She continues: "not everybody has the ability to do that…my mother-in-law used to be so impressed because we were all in the same room, whatever, doing something. And they would come to me and ask me something in French and then I would say, 'Oh, I don't know, go ask your dad', and they'd go and they'd switch. They'd ask [dad's name] the exact same thing, but they knew that they had to [speak in English]. They weren't even conscious of the fact that they were speaking two languages. For them it was just, okay, 'maman' is French, dad is English.".

4.4.4 Home Literacy Environment

While Nigel's parents are both highly literate professionals, Nigel's mother admits that deliberate literacy activities at home were more common when their children were younger. At bedtime, the children knew that they could pick one book in French for mom to read and one book in English for dad to read. "Always it was bilingual… and I wouldn't read in English". She admits that she and her husband are both not huge readers and tend to read only as required or the news.

Nigel's mother recalls trying out a library Storytime offered in French. "What I would find often, is that their Storytime in French, the person who did it wasn't necessarily French speaking." Given her concerns, she began attending the English story time instead, and left the language and literacy learning in French for their shared reading at home.

Books in French that are available seem to be translations and as Nigel's mother explains, "I find it difficult sometimes to read that because the translation isn't great, right? So, and because English is not an issue for me, I tend to gravitate towards English books and stories." She expresses the frustration that she has had over the years, accessing birthday cards in French to send home to family. "I jokingly tell my mom, I can send you a birthday card in Mandarin or

in Chinese. Those are readily available, but I can't get you a French birthday card." Similarly, most media and activities available to the family over the years have been offered in English. As with literacy, media in the home is made available in both languages as most convenient for the family. When the children were younger and home alone with their mother, they viewed television shows and movies in French. As a family, they have always watched their selections in English so that their father has access.

Nigel explains that, outside of school, he reads when he finds something interesting, no matter the language. "One of my English teachers, he wrote a book. So, I read that. I guess the book was science fiction.". He enjoys reading about hockey players, news, and biographies and the language of the text is usually English for news, but he has had some luck finding French texts. "I would say [I read] a mix. Yeah, I have some books in French that I've read before." To explain his literacy in the two languages Nigel says, "I think now, it's not really much more difficult [reading in English] than it is reading in French, but I remember I knew how to read French before I knew how to read English". He recalls that he learned to read English at home around the age of six." Nigel reports that he does not write for pleasure but is willing to write for school when required. "Right now, this semester I have French class, so like I am more used to writing in French", noting that he prefers writing in French.

4.4.5 Accommodations and Assistive Technology

Nigel noted that he readily uses the Bluetooth function on his hearing aids with his phone and always enables captions. "The shows I watch on Netflix are usually in English, and then they're like they have the talking over in French. So, I usually watch them in English." He recalls that the teachers used an FM system at school during classroom read-aloud activities when he was younger. "I think I might have used it maybe in grade four or five, but I haven't

used it in a while." For access as a teenager, he says that he positions himself closer to the person speaking when required. He agrees with his mother when she reports that he is a skilled speechreader. With hockey, he uses strategies to make sure he has understood. "When I'm in line for a drill, I make sure to be, like maybe third so I'd see people in front of me go and do the drill so I know what to do." His mother explains that his teammates know how to accommodate him by allowing him to be close to the coach during instructional moments. Nigel believes he just makes it happen and it is not really an issue. "I guess when the coach is like explaining a drill or something like drawing on the board, I mean, I wouldn't be at the back."

4.4.6 Language and Literacy Achievement

To arrange assessment meetings, Nigel's mother selected four individual days when he was not working at the golf course and could meet with me after school. Over the four sessions, we completed the French version of the WIAT first, followed by the English version. This was followed by the CELF assessments in English and then French. Nigel was equally comfortable speaking and working in both languages. On the days where Nigel was being assessed in French, nearly the entire session that is video recorded captures a complete French transcript.

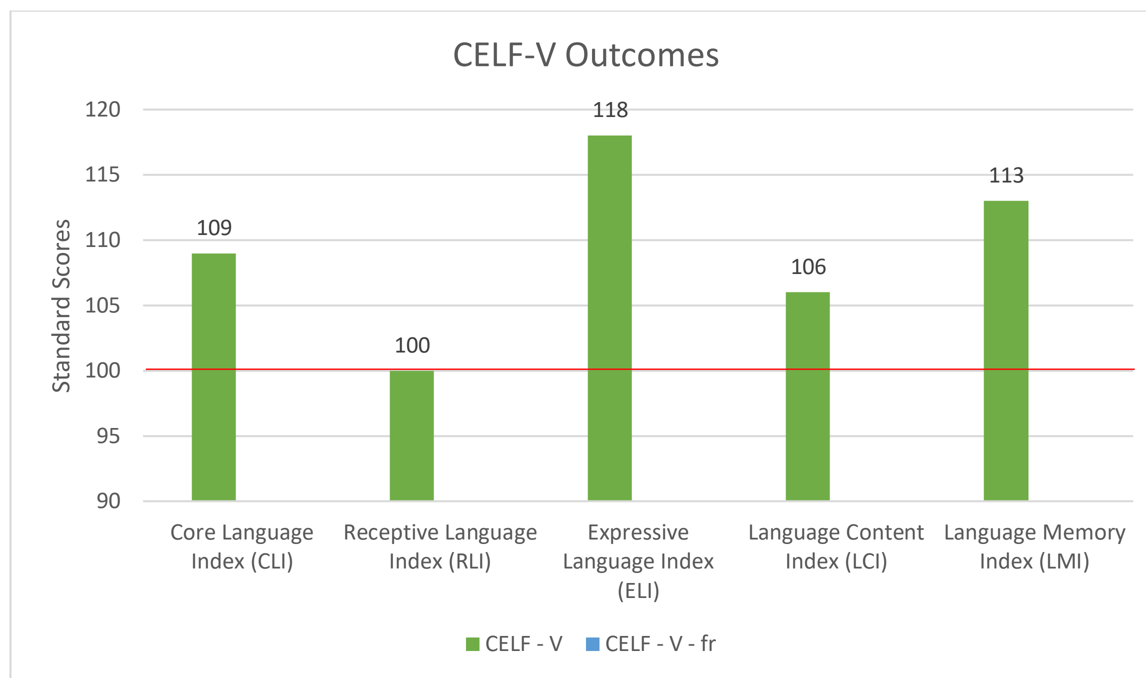
During the administration of the reading comprehension subtest of the WIAT, Nigel read both English and French texts silently. However, during the administration of the CELF, Nigel repeated directions aloud or used the read aloud strategy to assist with recall in both languages. For example, when listening to a long list of directions for the 'Following Directions' subtest, (e.g., If there is a big white circle, point to the X above the black circle, if not, point to the triangle below the square) or deciding upon a word pair in the 'Word Classes' subtest (e.g., dark, hot, soft, cold – 'hot' and 'cold' go together), he listened and repeated the directions to himself while answering.

4.4.6.1 Language

All scores on the CELF-5 were at or above the mean in English, ranging between 100 (i.e., Receptive Language Index) and 118 (i.e., Expressive Language Index) (see Figure 4.10). Due to his age (i.e., 17:4), standard scores were unavailable in French because the normative sample ends at 16.11 with the French version of the CELF-5.

Figure 4.10

Nigel: CELF-V Standard Scores

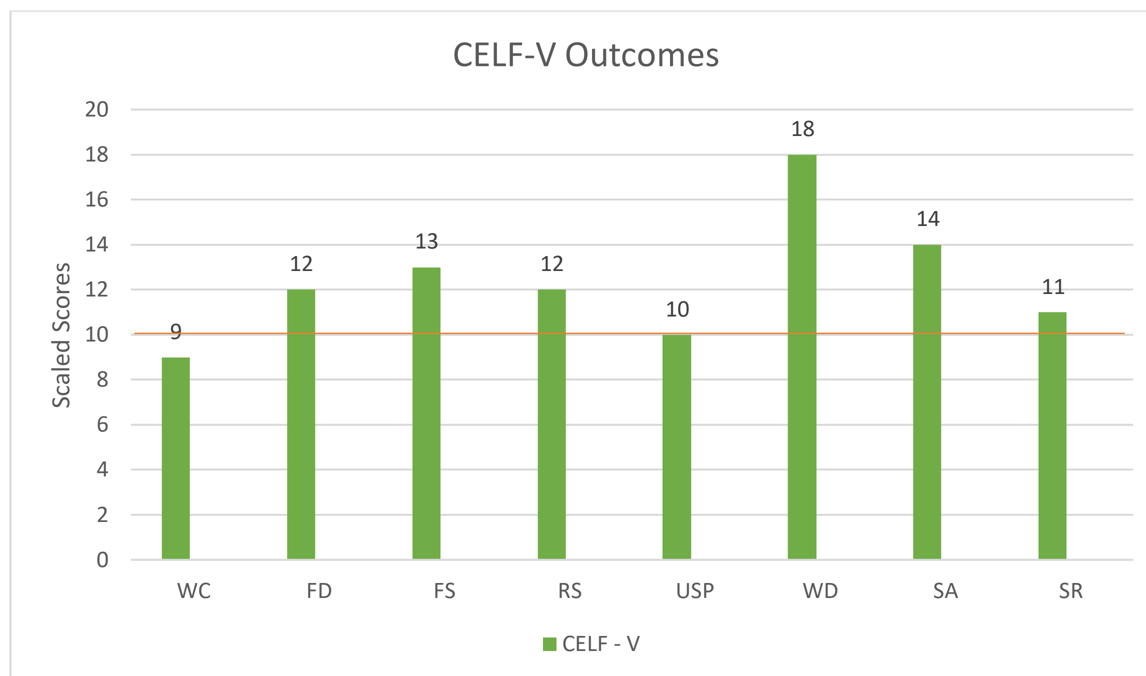


Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada

In considering scaled scores, (see Figure 4.11), all of Nigel's results on the English subtests are within the *average* range except for two which are *above average* (i.e., Word Definitions – 18; Sentence Assembly – 14). Given that standardized scores and scaled scores were unavailable for the French version of the CELF-5 due to Nigel's age at time of testing, Table 4.5 was created with Age Equivalent scores in both tests. Noting that the CELF-5-cdn-f normative sample ends at 16:11, therefore, the maximum age equivalent score possible is >16:10. The numbers on this table clearly illustrate that Nigel has equal strengths in both languages.

Figure 4.11

Nigel: CELF-V Scaled Scores



Note. CELF-V = Clinical Evaluation of Language Fundamentals, CELF-V-fr = Évaluations cliniques des notions langagières fondamentales – version pour francophones du Canada, WC = Word Classes, FD = Following Directions, FS = Formulated Sentences, RC = Recalling Sentences, USP = Understanding Spoken Paragraphs, WD = Word Definitions, SA = Sentence Assembly, SR = Semantic Relationships

Table 4.5

Nigel: CELF-V and CELF-V-cdn-f Age Equivalent Scores

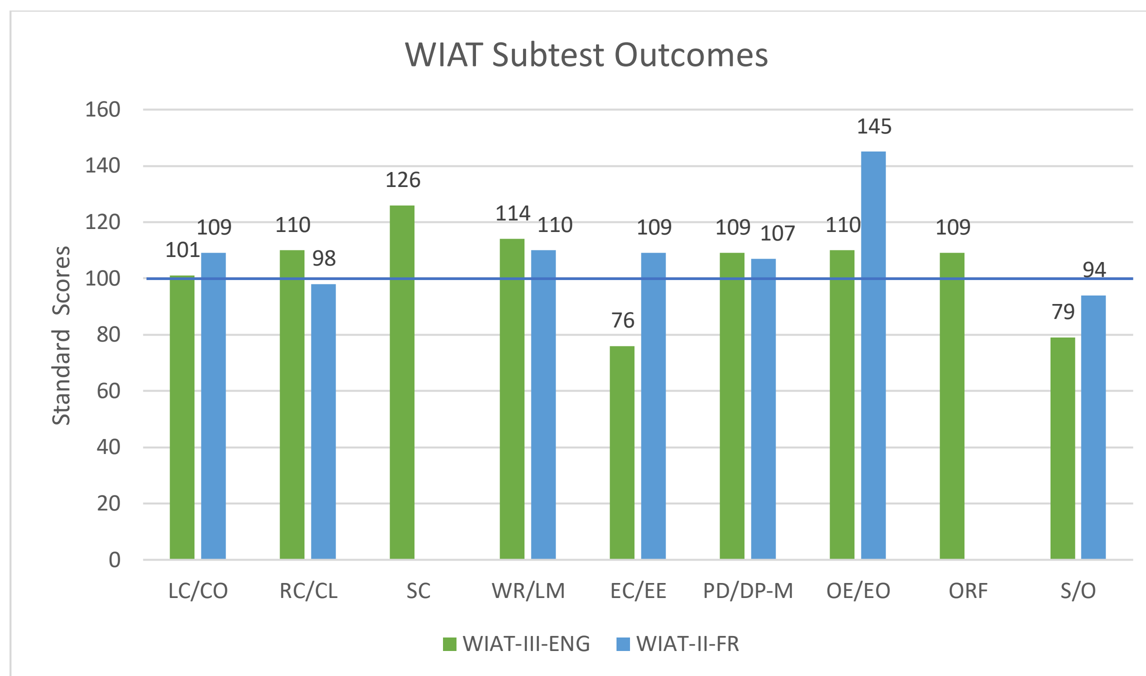
	CELF-V English	CELF-V-CDN-F
Word Classes (WC)	17:7	>16:10
Following Directions (FD)	>21:5	11:4
Formulated Sentences (FS)	>21:5	>16:10
Recalling Sentences (RS)	>21:5	>16:10
Understanding Spoken Paragraphs (USP)	N/A	N/A
Word Definitions (WD)	>21:5	>16:10
Sentence Assembly (SA)	>21:5	>16:10
Semantic Relationships (SR)	>21:5	>16:10

4.4.6.2 Reading and Writing

Nigel’s scores in most English subtests were above the mean, but two fell in the below average range (i.e., between 70 and 85). All subtests were above the mean in French with one score in Expression Orale [Oral Expression] at 145 standing out, indicating spoken language skills in French well above the average compared to a normative sample (see Figure 4.12).

Figure 4.12

Nigel: WIAT Subtest Standard Scores



Note. WIAT III-ENG=Wechsler Intelligence Achievement Test III English, WIAT II – FR= Test de rendement individuel de Wechsler deuxième edition version pour francophones du Canada, LC = Listening Comprehension, RC = Reading Comprehension, SC = Sentence Composition, WR = Word Reading, EC = Essay Composition, PD = Pseudoword Decoding, OE = Oral Expression, ORF = Oral Reading Fluency, S = Spelling, CO = Compréhension orale, CL = Compréhension de lecture, LM = Lecture des mots, EÉ = Expression écrite, DPM = Décodage des pseudo-mots, EO = Expression orale, O = Orthographe

In spoken language, Nigel's score in English for both Listening Comprehension (i.e.,101) and Oral Expression (i.e., 110) were in the *average* range. Reading scores in English indicate the high end of *average* ability (i.e., Reading Comprehension at 110; Word Reading at 114; Pseudoword Decoding at 109; Oral Reading Fluency at 109).

Writing scores in English indicate *below average* ability in two areas with standard scores of 79 in Spelling and 76 in Essay Composition. However, for Sentence Composition, Nigel's score was 126, well into the *above average* range indicating a strength in this area.

In spoken language, Compréhension orale [Listening Comprehension] was in the *moyenne* [average] range with a standard score of 109, but Expression orale [Oral Expression] was at the *très supérieure* [very superior] range with a standard score of 145. Reading scores in French indicate *moyenne* [average] ability with Compréhension de lecture [Reading Comprehension] at 98, Lecture des mots [Word Reading] at 110 and Décodage des pseudo-mots [Pseudoword Decoding] at 107.

The two subtests providing outcomes for writing in French indicate *moyenne* [average] ability with standard scores of 94 in Orthographe [Spelling] and 109 in Expression écrite [Essay Composition]. It would be worth noting that this portion of the test disinterested Nigel and motivation was low. Consideration of uncorrected written samples provide insights into what he may be capable of when motivated.

4.4.6.3 Summary

Outcomes for Oral Expression are strong in both languages but scores in French are stronger (i.e., 145 as compared to 110). The standard scores for Reading Comprehension are in the *average* range for both languages with English (i.e., 110) slightly stronger than French (i.e., 98). Lectures des mots [Word Reading] is similar across languages (i.e., French at 110 and English at 114). Essay composition in English (i.e., 76) and Expression écrite in French (i.e., 109) also represent an area where French is stronger. It is worth noting that the two areas where French scores are markedly higher relate to expressive language.

4.4.7 Uncorrected Writing Samples

Nigel provided two recent unmarked pieces of writing; essays written for his French and English classes (see Appendix L). His French essay examines the inner and outer beauty of the characters in Edmond Rostand's 1897 play *Cyrano de Bergerac*. Nigel's introductory paragraph names the play and its author, while revealing his argument. He uses appropriate spelling, punctuation, and grammar conventions (e.g., appropriate verb conjugation or agreement) with rich vocabulary (e.g.,"émouvantes" translated as "moving"), natural French phrases (e.g.,"ne pense pas aux risques ou ni aux répercussions avant d'agir" [does not think about the risks or repercussions before acting]), and appropriate literary terms (e.g., "profondément poëtique" [profoundly poetic]).

In 853 words, Nigel examines the author's use of storytelling to highlight the characters' personal qualities concluding that the author, [is a poet with many talents]', (i.e., Il est clair qu' Edmond Rostand est lui-même *un poète avec plusieurs talents*) and has been successful in causing the readers to feel 'as if we were in the protagonist's skin' (i.e., "comme si nous étions nous même dans la peau du personage."). Nigel's piece included quotes from an external source, "Senscritique", to strengthen his argument about physical suffering versus suffering heartache (i.e., "elle n'est pas démontre physiquement, il souffre dans son coeur"). Overall, this essay contains clear writing with strategy to successfully develop an argument set up in the introductory paragraph.

Nigel submitted a 'compare and contrast' essay in English examining two popular literary works: William Golding's *The Lord of the Flies* and Arthur Miller's *The Crucible*. Nigel's introductory paragraph names the authors, the titles of the two works, and the thesis statement. Examining the books' theme in the context of the consequences of actions and the dynamics of

social status, Nigel develops his argument using examples from the text. As he did with the French essay, Nigel uses appropriate spelling, punctuation, and grammar conventions (e.g., subject-verb agreement) and robust vocabulary (e.g., savagery, civilization, witchcraft). English phrases and literary terms (e.g., "innate human impulses"; "struggle to survive"; "depiction"; "portrayal") demonstrate his comfort in this writing style and fluency in spoken English.

Overall, Nigel demonstrates age-appropriate writing skills in both French and English. He uses mature, robust vocabulary and develops a good argument.

Chapter 5: Discussion

The discussion in this chapter will be framed in terms of the research questions that guided this study. This will include a synthesis of the findings from all four participants, considering the extent to which the research questions have been addressed and identifying areas for further consideration.

5.1 Research Question One

How does the language and literacy achievement of school-aged deaf learners in French language minority schools compare to age-based norms in French and English?

The scores from the standardized measures that were administered in this study indicate that these deaf learners have achieved outcomes in language and literacy commensurate with their hearing age peers in both French and English. On the Categories of Auditory Performance-II (CAP-II) three of the students were rated at a 9, the highest level of performance, with one rated at a 7, still an indication of strong auditory skills (i.e., uses telephone with a known speaker). Similarly on the Speech Intelligibility Rating scale (SIR), their oral language production in French and in English across all four participants was scored at a 5 (i.e., connected speech is intelligible to all listeners. Child is understood easily in everyday contexts).

5.1.1 Language

All four participants scored at or above average in both French and English in the CELF which is the assessment measure focused on expressive and receptive language fundamentals. (See Tables 5.1 and 5.2)

Table 5.1

CELF-V English Core Language Standard Scores (N = 4)

		CELF-V Standard Scores				
Participants	**Age**	**CLC**	**RL**	**EL**	**LCI**	**LMI**
Gloria	11:2	126	117	135	122	126
Emerson	16:4	135	127	122	112	140
Rebecca	16:2	118	104	116	102	118
Nigel	17:4	109	100	118	106	113

Note. CELF-V = Clinical Evaluation of Language Fundamentals, , CLC = Core Language Score, RL = Receptive Language, EL = Expressive Language, LCI = Language Content Index, LMI = Language Memory

Table 5.2

CELF-V French Standard Scores for langage fondamentales for Study Participants (N = 4)

		CELF-V-cdn-f Standard Scores			
Participants	**Age**	**ILR**	**ILE**	**ICL**	**IML**
Gloria	11:2	125	131	134	139
Emerson	16:4	119	123	121	116
Rebecca	16:2	103	104	109	108
Nigel	17:4	ɵ	ɵ	ɵ	ɵ

Note. CELF-V-cdn-f = Évaluation cliniques des notions langagières fondamentales cinquième édition version pour francophones du Canada, SLF = Score de langage fondamentale, ILR = Indice de langage receptif, ILE = Indice de langage expressif, ICL = Indice du contenu du langage, IML = Indice du mémoire du langage, ɵ = no results

It was possible to compare the standard scores outcomes in English to the ones in French with three of the participants; English standard scores were available for all four students. All three of the participants scored above the mean across the two languages. There are notably high scores in the Language Memory Index for both languages, with English scores for all four students being in the *average* to *above average* range (i.e., 113 to 140). Three of the four participants had at least average standard scores in both receptive and expressive language, indicating that they are able to understand and express themselves competently. This was true for both English and French. As previously noted, standard scores for the CELF-5-cdn-f could not be calculated due to age constraints. However, age equivalent scores similarly indicate competence in both receptive and expressive language in both French and English.

The language use during the interview and assessment sessions aligned with results of standardized testing in that all four deaf learners could readily shift between the two spoken

languages in natural conversation. All demonstrated that they could confidently use both languages to communicate effectively from making requests to engaging in complex discussions. They relied on their ability to codeswitch, engage in conversation and small talk in French or in English, and were observed telling stories naturally in both languages.

However, while all four students evidenced age-appropriate competence in both languages, Nigel and Emerson were able to do this with less effort – more native-like. For example, French has gendered articles that correspond to the grammatical gender of nouns (e.g., *la* maison*, le* livre). This differentiation is intuitive for native speakers, and Nigel and Emerson demonstrated this level of automaticity. Although Rebecca and Gloria did not make obvious errors, their process was more deliberate. Rebecca admitted that she can sometimes struggle with selecting the right words and needs "to be so careful to get her words correct." She also talked about the challenges of conjugating verbs and felt her vocabulary was more limited. "I also don't have that expansive of a vocabulary in French." She goes on to say that her French language skills are not native-like, and that English does not hold the same challenges for her as French. While she can maintain conversations in French, she was more likely than the other students to show a preference for English.

All four participants described how they operated in two languages. In this example, Nigel, translated the French word "*énigme*" into English in the middle of the sentence, and then continued in French. "*Enigme, c'est comme*, Oh, riddle, so, *c'est un casse-tête, Oh, c'est un enquête de mots!*". [Riddle, it's like, *Oh, riddle*, so, it's like a puzzle, Oh, it's a word riddle!] Gloria explained that sometimes she could not come up with the word in either language as it was just not in her brain right now. *"Je sais le mot mais ce n'est pas dans mon cerveau maintenant.*" [I know the word but it's just not in my brain right now.] But she also talked about

using her knowledge of the word in one language to prompt retrieval in the second. In this exchange with Emerson, he illustrates this strategy when defining the word "acquisition" as part of the French version of the WIAT,

Melanie: Frédéric utilize le mot acquisition dans son éditorial, qu'est-ce que celà veut dire?" [translation: Frédéric uses the word acquisition in his editorial. What does that mean?]

Emerson: Est-ce que j'ai le droit de le dire en anglais? [translation: Do I have the right to say it in English?]

Melanie: Sure.

Emerson: Okay. Ummm. To get.

Melanie: Okay.

Emerson: To buy.

Melanie: Mm hmm.

Emerson: To acquire.

Melanie: Mm hmm. Those are great words. Do you have those same words in French?

Emerson: D'acheter des nouveaux animaux, accueillir de nouveaux animaux. [translation: To buy new animals, receive new animals]

Melanie: It's fun where we can go between the two languages, isn't it? And sort of compare.

Rebecca also moved between French and English when defining words during the assessment. In this exchange she uses French and English within the same sentence.

Melanie: "*Que veut dire le mot remémorer dans la quatrième paragraph*?" [translated: What does the word 'reminisce' mean in the fourth paragraph?]

Rebecca: *Retenir dans ta mémoire* [translated: retain in your memory] – or um – No, I'm going to say that. Or, I could say, *partager avec les autres– le dire* [translated: share with others - say it]– No, I'm going to say that, *retenir dans ta mémoire*."

It is also worth noting that if a word was learned in the context of a school subject in French (e.g., geography), it was sometimes the case that the students did not know the equivalent word in English. Rebecca's strategy when this happened was to provide an explanation of the French word in English. As well, across learners, when they did not know a word in one language, the same word seemed to be problematic in the other language (e.g., both Nigel and Rebecca did not know the English or the French word for "peninsula"). Except for Emerson whose mother is from France, three of the four students also described frustration understanding European French as opposed to Ontario French.

5.1.2 Reading and Writing

All students scored at *average* or *above average* in reading in both French and English on the WIAT. See Table 5.3 and 5.4. Reading Comprehension scores give the strongest indication as to whether a student has learned to read (i.e., reading comprehension is the goal of reading instruction) (Gough & Tumner, 1986 ;Scarborough, 2001). For these students, the standard score in Reading Comprehension in English was *above average* for one of the four participants (SS = 132) and *average* for the three other participants.

Table 5.3

WIAT- III English Standard Scores for Study Participants (N = 4)

					WIAT III Subtests					
P	**Age**	**LC**	**RC**	**SC**	**WR**	**EC**	**PD**	**OE**	**ORF**	**S**
1	11:7	112	132	127	124	119	127	127	104	118
2	16:	123	108	ɵ	118	ɵ	130	112	81	123
3	16:2	103	108	115	115	120	115	110	103	108
4	17:4	101	110	126	114	76	109	110	109	79

Note. WIAT III = Wechsler Intelligence Achievement Test III, LC = Listening Comprehension, RC = Reading Comprehension, SC = Sentence Composition, WR = Word Reading, EC = Essay Composition, PD = Pseudoword Decoding, OE = Oral Expression, ORF = Oral Reading Fluency, S = Spelling. ɵ = no results

Table 5.4

WIAT-II CDN-f Standard Scores/Scores d'équivalence for Study Participants (N = 4)

				WIAT II-CDN-FR Subtests				
P	**Age**	**CO**	**CL**	**LM**	**EE**	**DPM**	**EO**	**O**
1	11:2	109	155	101	131	114	149	109
2	16:3	145	134	117	~~O~~	112	134	135
3	16:2	107	132	106	141	115	139	99
4	17:4	109	98	110	109	107	145	94

Note. WIAT II – CDN-FR= Test de rendement individuel de Wechsler deuxième edition version pour francophones du Canada, CO = Compréhension orale[Oral comprehension], CL = Compréhension de lecture [Reading Comprehension], LM = Lecture des mots [Word Reading], EÉ = Expression écrite [Essay Writing], DPM = Décodage des pseudo-mots [Pseudoword Decoding], EO = Expression orale [Oral Expression], O = Orthographe [Spelling]

The Lecture [Reading] composite standard score results for the WIAT – II French version reflected *supérieure* [superior] (i.e., between 120 and 130) achievement for three of the four participants (SS = 130, 127, 123) and achievement in the *moyenne* [average] (i.e., between 90-110) range for the fourth student. Lecture [Reading] composite is made up of Lecture de mots [Word Reading], Compréhension de lecture [Reading Comprehension] and Décodage des pseudo-mots [Pseudoword Decoding]. Parallel to findings in the English version, three of the four participants' standard scores in Comprehension de lecture [Reading Comprehension] were in the *très supérieure* [very superior] range (i.e., >130), despite their *moyenne* or *moyenne élevée* [average to high average] scores in the other subtests. The fourth student scored higher in the Lecture de mots [Word Reading] and Décodage des pseudo-mots [Pseudo-word Decoding].

The three students who completed the writing portion of the WIAT achieved *above average* scores in both French and English. Emerson did not complete the written portion of the WIAT assessment in either language due to a writing disability.

In English, all three student participants had standard scores within the *above average* range (i.e., 127, 115, 126) in Sentence Composition. Scores in Essay Composition were within the *average* range with two student standard scores in the *above average* range. Essay Composition takes into consideration Word Count, Theme Development and Text Organization, and Grammar and Mechanics. While deaf learners have historically struggled to develop age-appropriate writing abilities (Mayer, 2007), all four students in this study demonstrated average or above average abilities in Essay Composition including age-appropriate spelling skills in both languages.

The French written aptitude scores of the students fell within the *moyenne* [average] to *très supérieure* [very superior] range (i.e., 109, 131,141). The Expression Écrite [Essay Writing] subtest includes a breakdown of the student's essay in areas of spelling, punctuation, sentence structure, theme development, vocabulary use, and grammar. Orthographe [Spelling] standard scores were more reserved falling within a lower range of *moyenne* [average] and supérieure [*superior*]; Emerson scored in the *très supérieure* [very superior] range for this one writing subtest that he participated in.

The uncorrected written language samples provide further evidence of age-appropriate achievement in both languages and were especially important to examine for Nigel whose standardized scores were lower in writing than the other subtests. It appears that these learners, when given the time and appropriate motivation, can develop age-appropriate writing when examined using the exemplars from the Ontario Curriculum Documents (Ontario, 2024a; Ontario

Ministry of Education, 2013) as frameworks. Three of the students were able to develop and organize content and use their knowledge of form and style to make decisions about the appropriate use of the language for a specific audience to communicate their meaning clearly and accurately. Mature use of vocabulary, language conventions, and editing skills were evidenced in the writing samples.

Of the four participants, Gloria and Rebecca expressed the most interest and enthusiasm in writing. Both shared that they found writing in English to be more natural for them if they were doing any writing as a leisure activity. While Nigel did not explicitly express any distaste for writing, he provided relatively short compositions compared to the other participants for both versions of the WIAT assessment, and his uncorrected writing samples, while well done, were also short and to the point. Given his writing disability, it is not surprising that Emerson was most vocal about not wanting to participate in the writing portion of the assessments.

Overall, all participants demonstrated age-appropriate language and academic skills in both languages, however, it would be interesting to consider whether overall they were stronger in one language than another. While the small number of study participants limits the ability to identify possible patterns of performance across languages, it is possible to explore this question using difference scores. For this analysis, difference scores were calculated by using WIAT scaled scores in English and subtracting scaled scores in French. A positive number would indicate that English scores were higher than French scores, while a negative number would indicate that English scores were lower than French scores. In this context, the terms “positive” and “negative” simply reflect the direction of the difference. Table 5.5 summarizes these results.

Table 5.5

WIAT-III and WIAT-II Difference Scores (N=4)

Participant	LC/CO	RC/LC	WR/LM	EC/EE	PD/DP-M	OE/EO	S/O
Gloria	+3	-23	+23	-12	+13	-22	+9
Emerson	-22	-26	+1	N/A	+8	-22	-12
Rebecca	-4	-24	+9	-21	0	-29	+14
Nigel	-8	+12	+4	-33	+2	-35	-15

Note. WIAT III-ENG=Wechsler Intelligence Achievement Test III English, WIAT II – FR= Test de rendement individuel de Wechsler deuxième edition version pour francophones du Canada, LC = Listening Comprehension, RC = Reading Comprehension, SC = Sentence Composition, WR = Word Reading, EC = Essay Composition, PD = Pseudoword Decoding, OE = Oral Expression, ORF = Oral Reading Fluency, S = Spelling, CO = Compréhension orale, CL = Compréhension de lecture, LM = Lecture des mots, EÉ = Expression écrite, DPM = Décodage des pseudo-mots, EO = Expression orale, O = Orthographe

While no patterns appeared to emerge within participants, each participant seemed to be stronger in English than French for some subtests but better in French than English for others. However, this pattern of performance differed among the individual participants. It is interesting to note that as a group, Oral Expression/ Expression orale scores were consistently much stronger for French than for English. This may be a reflection of the fact that these students spend the majority of their time in school and in the home environment using French, and this quantity of exposure enhances their competence in the language. That said, it should be underscored that even though their performance in English was relatively weaker, it was still in the average to above average range. Therefore, it is appropriate to characterize them as balanced bilinguals.

5.1.3 Summary

The findings overall indicate that these students are achieving in the *average* to *above average* range in language and literacy in both French and English, providing evidence that bilingualism and biliteracy are possible for deaf students. Acknowledging the heterogeneity of the deaf student population, these students could be seen as representative of the cohort who have been early identified and fitted with hearing technology.

While historically, spoken language development has been the primary struggle for deaf learners, recent evidence indicates that many monolingual deaf learners are now achieving age-appropriate language outcomes (Ganek et al., 2012; Guiberson, 2005). The introduction of the UNHS and high-performance hearing technology have allowed families to close the language development gap between deaf learners and their hearing counterparts.

This study highlights a new group of deaf learners whose parents believed that they would be able to, like their hearing peers, develop age-appropriate language in two spoken languages with no apparent negative consequences. Interviews with parents uncovered that it was natural for them to have two languages in their homes. Interviews and incidental conversations during assessments with the deaf participants provide evidence of code-switching from balanced bilinguals who are proud to be able to use their languages interchangeably. Outcomes on four standardized assessments show that, given their age-appropriate vocabulary scores in both languages, these deaf learners have larger lexical sizes overall compared to monolinguals. This example of the accrued benefit of bilingualism being lexical size (Bialystok et al., 2010; Poulin-Dubois et al., 2012) is consistent with the findings of the overall benefits from studies of typically hearing bilinguals (Cummins, 1998; Kempert et al., 2011; MacIntyre et al., 2011; Oller & Pearson, 2002; Roy, 2015). There is an additional group of studies that

highlight the advantages of French-English bilingualism in Canada (Allen, 2004; Cummins, 1998; Genesee, 2007; Genesee & Jared, 2008; Lambert, 1978; MacIntyre et al., 2011; Roy, 2015).

In sum, all four students are capable readers in French and English, and based on their comments during interviews, their reading preferences related to the topics that interested them, rather than being constrained by the language of the text (e.g., Nigel chose to read about sports irrespective of language). Choice in some cases was limited by the availability of books in French in general, and on their preferred topics specifically given that they were living in a francophone minority context.

Historically, deaf students demonstrated literacy achievement well below hearing age peers with a substantive body of research indicating deaf students graduate high school reading at or below a fourth-grade level (e.g., Allen, 1986, Qi & Mitchell, 2012, Traxler, 2000). However, there has been a dramatic improvement in these outcomes since the introduction of UNHS and improved hearing technology (Tomblin et al., 2018) with many students achieving age-appropriate literacy outcomes (Mayer & Trezek, 2018; Mayer & Trezek, 2020; Mayer et al., 2021). These improved results focus on monolingual deaf learners, but this study demonstrates that literacy achievement at or above age-appropriate levels is also possible for deaf spoken language bilinguals. These study participants evidenced *average* or *above average* scores on the WIAT in both languages in Language, Reading, and Writing subtests. Their uncorrected writing samples provide further evidence to their ability to use both languages to create engaging written texts.

5.2 Research Question Two

What are the demographic characteristics of these deaf students (i.e., gender, degree of bilateral hearing loss, personal amplification, level of auditory functioning, grade placement, additional disabilities, home language, home literacy practices) enrolled in French minority schools?

Table 5.6

Demographic Data

	Gloria	Emerson	Rebecca	Nigel
Age/Grade	11/6	16/10	16/11	17/11
Gender	female	Male	female	male
Additional disabilities	none	ADHD, IGD, Autism, Gifted, WD	none	none
Degree of Hearing Loss	mild to moderate	profound	moderate-severe to severe	mild-moderate (L) moderate-severe (R)
Personal Amplification	bilateral hearing aids	bilateral cochlear implants	bilateral hearing aids	bilateral hearing aids
Home language	F: English M: French	F: English M: French	F: French M: English	F: English M: French
Educational Setting	francophone school	anglophone high school	francophone high school	francophone high school
CAP	English: 9 French: 9	English: 8 French: 8	English: 7 French: 6	English: 9 French: 9
SIR	English: 5 French: 5	English: 5 French: 5	English: 5 French: 5	English:5 French: 5

Note. ADHD = Attention Deficit Hyperactivity Disorder, IGD = Idiopathic Growth Delay, WD = Writing Disability, L = left, R = right, F = father, M = mother

There were no substantive differences among the participants in their language and literacy performance based on gender or grade level, and although Emerson was identified with additional exceptionalities, these did not negatively impact his achievement except for the accommodations made for his writing disability.

5.2.1 Personal Amplification

These four students represent a range of hearing losses from mild-moderate to profound. All were fitted with hearing aids shortly after birth, and one of them, Emerson, was subsequently implanted bilaterally at age 4. Emerson currently wears bilateral cochlear implants and enjoys Bluetooth technology to stream audio through his processors. All four students were consistent hearing technology users from the time of diagnosis and all parents were committed to ensuring that their child had good access to speech during all waking hours, a significant predictor of age-appropriate language development (Cupples et al., 2017; Tomblin et al., 2018). As Ching et al. (2018) note "early device fitting was associated with higher global language scores" (p. S107).

All four students accessed Remote Microphone (RM) systems provided to them by the school board during their primary junior grades. As is typical of intermediate/senior students, the three older participants admitted that they are no longer diligently implementing daily use of RM systems at school. None of them use RM systems outside of the educational setting. Despite this, the early consistent use of RM systems referenced in each of their stories could have provided better access to spoken language in the classroom settings during their formative years. The parents all reported that the classroom teachers were cooperative users of these hearing technologies. As well, all four families described accessing captions when streaming media in their home. Both parents and students commented on their on-going reliance on these technologies for access.

These observations are in line with the research indicating that early identification in combination with early fitting and consistent use of hearing technology provides a firm foundation for age-appropriate language development (Cupples et al., 2017; Ching et al., 2018; Tomblin et al., 2018). This study builds on earlier research suggesting that with earlier intervention and appropriate fitting of hearing technologies, age-appropriate language development can occur in more than one spoken language (Bunta et al., 2016; Bunta and Douglas, 2013; Guiberson & Crowe, 2018; Guiberson, 2014; McConkey Robbins et al., 2004; Wright et al., 2023).

5.2.2 Home Language and Educational Setting

These four deaf francophone students grew up in exogamous homes with one bilingual francophone parent and one anglophone parent. Three of the four participants had exposure to both languages from birth, with Rebecca being the only one who had later access, learning French upon school entry. All four were enrolled in a francophone school at kindergarten, although Emerson moved to different settings during his intermediate years to access more robust programming and support for his additional educational needs. As well, as they were all living in Southern Ontario, an area of the Canadian province where most services are delivered in English, they grew up as minority franco-Ontarians interacting primarily in the majority English language outside of the academic setting (e.g., community events, library story time, extra-curricular activities, sports, out of school friendships).

Depending on the extent and onset of their exposure to spoken French in the home, these four deaf learners could be characterized as either simultaneous or sequential bilinguals. Simultaneous bilingualism refers to the development of two languages alongside one another, typically beginning at birth, whereas sequential bilingualism refers to the development of the

second language following the robust development of the first and typically at school age or older (Kay-Raining-Bird, 2016). Bylund and colleagues (2021) argue that when comparing the lexical size and proficiency of bilinguals, it is important to consider both age of acquisition of the languages and whether acquired simultaneously or sequentially.

Nigel and Emerson's language experiences in the home are characteristic of simultaneous bilingualism as both mothers spoke only in French to their sons, and their fathers spoke only English. Emerson's mother is bilingual but begins most conversations with me in French and relates that she feels most comfortable expressing herself in her first language. She was home with Emerson when he was an infant and spent more time with him than the father, therefore, Emerson's earliest language experiences were primarily in French. She believes he was a simultaneous bilingual because his father and paternal grandparents spoke English with him. When asked to estimate the current percentage of English spoken in the home, she guessed at 60% English and 40% French; a shift, she explains, that happened once Emerson started attending the English language schools. However, during the interview, both Emerson and his mother code switched continuously and naturally. Emerson's mother was satisfied that her son's French is now well established and believes that they did their best to achieve a bilingual home and education experience given the resources available in their area.

For Nigel, bilingualism was so intertwined in his life experiences that it was not something he needed to work particularly hard at pursuing. Nigel consistently experienced immersion in the minority language both at home and at school. With his mother's presence, he also experienced codeswitching between the languages when participating in extra-curricular activities where spoken English was being used (e.g., hockey). Even at 17 years of age, he was able to maintain his bilingualism though admitting that sometimes outside of class, he and his

francophone friends spoke English together. When asked about why they would switch to English outside of school, he admitted that with English all around them, it just happened. Even so, the strong extended family influence seems to have bolstered Nigel's ability to maintain social French alongside his mother's determination to speak French in the home.

Gloria's mother reported that she had to be intentional about using French in the home and found it difficult to speak French with her daughter consistently until she was enrolled in the French pre-school when the onus was not exclusively on her to use the language. Even though this meant that Gloria's exposure to French might have been somewhat more limited than that of Nigel or Emerson, she could also be characterized as a simultaneous bilingual as she was exposed to French from birth, with support from bilingual home-visiting services.

In contrast to the others, Rebecca could be considered a sequential bilingual as her exposure to French began at approximately 45 months of age, once she was enrolled in the minority French kindergarten class. Rebecca's father reported that it was only then that he began using French by labeling objects in the home. Up to this point, very little French language had been spoken in her home even though the language was valued by both parents. Her francophone father admitted that after having lived so long in an anglophone environment, French had become almost his second language, and he would more naturally speak in English.

5.2.3 Home Literacy Practices

All four families reported making literacy activities a priority and they saw these as critical for their child's overall development. They all described reading to their child consistently from birth; for three of the four families, in both languages. On the parent questionnaire the families noted making frequent and regular trips to the library and having many books (i.e., more than 50) available in the home. They were all were particularly proud of the

emphasis they placed on literacy-related practices and this was reflected in their comments during the interviews.

Each family explained how literacy activities provided a good backdrop for introducing vocabulary and supporting spoken language development. For example, Nigel's mother described the bedtime routine in their home where the children were permitted to select two books, one for each parent to read in their own language. Gloria's mother described mining the library for French books and eventually hunting down popular books translated by French Canadian translators. She initiated role playing activities to enhance Gloria's understanding of the text. Gloria's extended family played a part in providing the family with high quality French literature from Quebec, including novels but also the popular Larousse encyclopedia-style reference books.

Home literacy practices such as book sharing, reading aloud and library visits have been shown to contribute to bilingual learning including development of vocabulary (Ryan, 2021). Ryan also notes that parental reading patterns (e.g., seeing parents reading for pleasure) has a positive influence on a child's literacy development. Rebecca's mother is an avid reader and her father credits his wife with being a model to her children around valuing books. Emerson's mother took me into her basement to share her library admitting that she cannot part with any of the books they have acquired over the years. Nigel's mom confided that when she reads for pleasure, though access to French literature would have been nice, she tended to only find English novels in her community. Gloria's mother explained that she decided reading for pleasure herself was the route to encouraging Gloria's enjoyment of books, commenting that "kids do what they see". That's when she began a reading hour in their home.

In the current context, some types of media engagement have been shown to positively

impact language and literacy development (Leach, 2017; Linebarger & Walker, 2005; Rivera Pérez et al., 2020). Literacy practices vary and change over a child's lifetime (Ryan, 2021), and for older students, digital media may be more engaging (Leach, 2017). For example, Nigel's mother encouraged his reading via the digital form of sports news and autobiographies. For deaf learners, employing the captioning while accessing this media, can provide further support for language and literacy development.

Interestingly, media engagement across the four homes occurred primarily in English. Screen entertainment was not as commonly used to promote French language experiences particularly as the students got older. Two families reasoned that it was a function of being mindful to include the anglophone parent and the limited number of interesting programs available in French once their children matured. Gloria's mother recalled finding a few popular programs for her daughter in French that were interesting to Gloria when she was younger.

Emerson's family stands apart in that they continue to seek out popular shows and even game shows from France. Emerson's mother actively seeks out entertainment from familiar places from her home country: "We tend to try to watch some shows in French and stuff. Some shows that I can access from France, and they love it. 'Fort Boyard' by way of an example…it is a game show. They have some challenges that they have to do in a fort that used to be a prison… It's a nice game in a fort and is in a place that we go on vacation when we're in France so it's kind of all connect together for us.".

5.3 Research Question Three

How do deaf students and their parents describe their experiences of education in a bilingual environment?

Throughout the interviews all four students reflected on their many positive educational experiences and the parents recorded similar positivity in the questionnaires. All participants received support from a teacher of the deaf, although there was less direct support once they were beyond grade three. The families reported that the support provided during the first years of schooling significantly improved their child's overall educational experience in the long run. All four students were provided with RM systems and made use of pass around microphones in the classroom. Gloria's mother described being permitted to borrow the RM system during the summer months for extra-curricular outdoor activities.

Just as francophone students in the hearing context, these students talk about limited access to quality French resources, including television programs and books. Rebecca recalls reading little fairy books acquired through the school and written in French as a younger child but admits that she, as an older student, reading for pleasure has been more difficult because of the lack of interesting French texts. Reading the required texts in her French classes tends to be the only literacy experiences that Rebecca mentions. Parents all mention seeking to provide their children with quality resources and leaning on the school and library to support this endeavour. Gloria's mother reported having had some measure of success acquiring books written by French Canadian authors. Due to Emerson's ability to engage easily with European French as easily as Ontario French, his selection of books and media have been larger than the other three students. Even so, Emerson complained about the limited number of books in the school libraries on topics that he is interested in.

Despite the strong support that the families reported on following the transition to school years and throughout the elementary years, some issues were raised by the parents. One parent described needing to connect with the classroom teacher when she heard of a misuse of the pass

around microphone. Another parent described being intentional about withdrawing their child from additional withdrawal services that were deemed unnecessary. The families expressed concerns about over-servicing their children and drawing attention to them by over supporting them.

Emerson's mother provided the most critical view of the educational system and took it upon herself to advocate extensively for her child. She explained that at school entry, initially the board was only able to offer mainstreaming in the classroom with the support of an educational assistant. Emerson's mother joined forces with another parent to advocate for the deaf learners in the francophone school system. The board hired a speech language pathologist to assess the learners and proceeded to learn about auditory verbal therapy to support some of the deaf learners in the system. Shortly thereafter, and due to their advocacy work on behalf of the deaf learners in the French system, the board hired a qualified teacher of the deaf.

What the family found was that with all their hard work and the support he was receiving at school, Emerson's language development progressed successfully. He learned to read in French and easily transferred his knowledge of reading to English. By grade two, he no longer received direct service from the teacher of the deaf because the classroom teacher was able to work with Emerson to ensure good access.

The school board continued to consult with an educational audiologist to ensure that appropriate assistive technology was ordered and well implemented. Support from the provincial school consultants was offered to the family on an every-three-months basis, however, they declined the withdrawal support because this was focussed on the development of langue des signes québecoise (LSQ), the French signed language that is used by most members of the Canadian francophone Deaf community. Emerson's family was focused on the development of

spoken language and therefore, signed language was not selected as a language to develop at that time. The consultant continued to provide the school with professional development and consultative services as required.

Rebecca's father highlighted the nature of the support that they received when she was initially enrolled in the school. He argued that they had almost too much support to start and found himself withdrawing her from the programming intended to teach her the langues des signes québecoise (LSQ) when he realized that it was a language that would not be useful in their anglophone community.

The three older students in the study reflected upon their school experiences at the high school level. While Nigel and Rebecca seem less comfortable drawing attention to their listening needs, Emerson spoke of himself in terms of his strength as a self-advocate: "I naturally became one. Yeah, I just kind of oriented myself. 'Okay, so this is what I need'. And the teacher, I think that teachers are less intimidating and more just there to help compared to some other kids. If you know what I mean. I'd ask for help as soon as I needed it, for the most part."

Of all the students, Rebecca reflected the most on her school experience. She expressed some frustration with not having the option to save her grade 12 English class for her grade 12 year. This happened because her school is so small and they don't offer classes every semester or every year. She explained: "See in English class now, like I'm taking a 12th grade one. I'm in 11th grade, but I'm taking 12th grade right now and I wish I'd waited until 12th grade. I was kind of pushed it into this, like cornered into this because they only had so many options for you to take."

To achieve the level of success demonstrated by the deaf learners in this study, several measures of support need to be in place. First, the positive impact of early identification through

the UNHS programs has been studied (Durieux-Smith et al., 2008; Pimperton et al., 2014; Ching & Leigh, 2020). Families who take their role in developing language seriously can greatly impact the trajectory of spoken language learning (Fitzpatrick et al., 2007; Ramey & Ramey, 2006). Daily and effective use of hearing technology to provide access to spoken language is imperative during early development (Yoshinaga-Itano, 2004; Yoshinaga-Itano, 2006). The support received through qualified early interventionists in the early years can significantly impact the quantity and quality of meaningful interactions necessary for language development (Mayer, 2007; Mayer & Trezek, 2015; Ramey & Ramey, 2006; Yoshinaga-Itano; 2004). Support for language and literacy development should follow students into the school system and level of support should be determined based on need. Teachers of the deaf can support in many different ways and, with a greater number of students having their needs met in the mainstream, the role of teacher of the deaf can change and shift over their time (Dorn, 2018).

The requirements for success for deaf learners who are acquiring more than one spoken language, were seen in this study. It is important to acknowledge that these parents were all highly motivated and had the resolve to pursue a bilingual option. All four participants received early intervention and three of the families intentionally accessed bilingual early intervention. Transition to school meetings were held for all four participants where the families were able to determine whether their child would be provided with language and literacy support, assistive technology (e.g., RM systems), and any alternative curriculum support (e.g., auditory management). All of the families explained that the most intense support occurred during the primary years; almost more support than they needed. As Dorn (2018) reports, there are varying roles of the teacher of the deaf throughout the students' time in school; the nature of the support changed as these student participants became more independent in their learning environments. It

has long been known that support all the way through from identification to transition out of the school system influences outcomes and should be made available to all families of deaf learners (Gravel & O'Gara, 2003; Luterman & Kurtzer-White, 1999). .

5.4 Research Question Four

How do parents of deaf students describe their decision-making process around enrolment in minority language education?

All the students in this study were early identified and fitted with hearing technology in the first year of life affording meaningful access to spoken language. As such, this group of parents were among the first to make the decision of whether to opt for spoken language bilingualism for their children from the outset. In describing this decision-making process, each parent reported receiving conflicting opinions from professionals. Wright and colleagues (2022; 2023) found that in the UK there continue to be a small group of professionals (e.g., audiologists, teachers of the deaf, speech language pathologists) who consider bilingualism to be contraindicated given the possibility of linguistic confusion. Similarly, parents in in the United States reported being told to abandon their home language and focus on the majority language (Guiberson, 2005; McConkey-Robbins et al., 2004).

However, in contrast, Australian studies (Crowe et al., 2014; Crowe & Guiberson, 2021) indicate that most professionals believe that parents should continue to speak their home language to their deaf child, even if they are fluent in the majority language. Guiberson (2013) found that parents in Spain reported that most professionals, (e.g., speech and language pathologists and audiologists), were supportive of bilingualism during the decision-making process even though they also reported that access to information about choices was sometimes a challenge.

Three of the parents explained that once they made the decision to continue with spoken language bilingualism, they had to become advocates and actively seek support from professionals who would stay the course with them. The decision to communicate in both languages began early with three of the four families and came later, at transition to school, with Rebecca's family. These same three families described receiving bilingual early intervention services through a qualified teacher of the deaf and Emerson's family benefited from bilingual service providers at the hospital in a bilingual community during his first year of life.

Emerson's mother explained her single-minded focus upon diagnosis. She believes that the decision to speak French with Emerson came easier because of the bilingual support they received in the hospital where these services were the norm. Despite being told that they had to pick one language, in her community French was given equal status by the therapists. It wasn't until they moved to Southern Ontario, a more anglophone area of Ontario, where they were unable to access French language services as readily. Emerson's mother spent the first three years of his life with him at home, so she was able to expose him to both quality and quantity of French for his first few years.

Nigel's mother explained her decision to focus on the development of French in her bilingual home despite the advice from her audiologist to focus on English, a story consistent with parental reports from the U.S. (Guiberson, 2005; McConkey-Robbins et al., 2004; Steinberg, 2003; Waltzman et al., 2003). She continues to speak French with her children in the home; it comes easily to her because she spends her days at work communicating in French and naturally carries on in French once home for the evening. Switching back and forth from French to English happens when her husband is present, but she relates that when he is not around, they stick to French. She relates that communicating with Nigel in French is not different than with

her hearing daughter: “I never, I don't think I have anyways, treated him like he has hearing loss. To me it is…I don't think of it. In some ways that's not a good thing. Right? Like sometimes I think, oh yeah, shoot - I forget that his hearing environment is different than other kids, but I don't know…I have noticed over the years that he compensates for his hearing loss… I know he can read lips…and for the longest time I don’t think he even realized that he could”.

Parents also recognized the predominating influence of the majority language, English. They understood that without the minority French school, their efforts to support the continued development of French would be challenging, but if they worked to create a bilingual home setting, and they enrolled their child in the minority French setting, they believed that a foundation would be laid for their child to become bilingual. The parents did not doubt that the majority language would also develop with natural exposure both at home and in the community.

Nigel’s mother explained her decision to send him to a French school this way. “It was always French….So for me, it just wasn’t natural to speak to him in any other language. Right? So, and I know that just in the long run too, like for myself included, it’s like – I have a job because I speak French and like so I wanted to be able to give him that same option - right - for two languages. And then that way I wasn’t worried about him learning how to speak English. I knew that was going to come. And with [my husband] being English, he was going to pick up that way. So I was really, because we’re in a minority environment – so I was like – I am going to be the only one that’s going to speak French to him. So that [enrolling him in minority French school] was important. And then I – like – putting him in a French school, then, he’ll have that as well. So that way when he’s out everywhere else, he’s going to learn English, right?”

Gloria’s mother explained that, “My mom only speaks French and I can’t - with him [husband] being only an anglophone, I couldn't do enough French with her, too. Yeah. And I just

found that the school really was a huge influx of French culture and information and vocabulary, that it improved our ability to speak French at home."

Rebecca's parents both described how, in making their decision, they recognized the advantages of bilingualism in the Canadian context for future employment. Rebecca's mother has been actively improving her French so that she could better support Rebecca. She also believes her motivation to maintain and work on her French may have had a positive influence on Rebecca.

Three of the four parents described the emotional connection they have with French and their desire to be able to express themselves to their child in their first language. They also described extended family as a motivating factor for pursuing enrolment in French minority schools despite living in anglophone communities. Emerson's mother described the possibility of returning to France and how education in French would be imperative for a successful transition should this possibility occur. She also felt that she would be better able to support her children academically if they were educated in French. "My parents are back in France, it may have been more difficult to learn any sign language [rather than French]. And if I had to learn sign language, here, the most sense would have been the ASL, which for my parents, would have been really difficult and we would have lost our connection".

Nigel and his mother reflected on the relationship that they have with her side of the family where conversational exchanges occur almost exclusively in French. "My parents and my sisters [and their families] are the only ones who speak French…we usually go up north in the summer, go and spend a week or two with them. My kids speak to them only in French. So even texts and phone calls…it's always in French".

Connection to heritage and culture is often a motivating factor for language development or language maintenance. “Language, in particular, is essential to taking up cultural identity… Language isn’t just the medium by which a people communicate with each other; it is the key (or ‘code’, as anthropologists call it) to accessing an entire world of rich nuance, meaning and belonging to one another that only a community member would understand” (Lam-Bentley in Paradis et al. 2021, pg. 211). Gloria’s mother commented about how pleased she was that the school was so enthusiastic towards teaching about the French culture. “The passion for French [at the school] is so, so much stronger than it is in Quebec, where it's kind of a given that you speak French, whereas here, people really have to care for the language in order to get to a point where they're teaching it, like just having a whole system. It's a real passion for it and that I've never experienced. And I thought that was really special. And then like I fought French my whole childhood, like I just didn't want anything to do with it. And here people are very committed to it in a way that in Quebec is sort of like it isn't even it's not even a decision.”

Emerson’s mother explains how the relationships her family have with other francophone families “nourish” Emerson’s French language skills. To disentangle the language from the culture would be impossible, as it sounds like even establishing where the French friends are from is important to distinguish. Nigel’s mother mentions her parents and the connection to language. “It would be weird if you spoke to Pépère and Grandmère in English.” and Nigel agrees: “yeah it would”. Although she does not explicitly mention culture, she is focused on the quality of the language that her children are exposed to. “I was so protective of their French language, I was so adamant that you needed to like, I wanted them to learn how to speak French and speak it properly, that I didn't want to expose them to bad French.”

Rebecca reminds her father that her aunt “sometimes tries to speak French with us”. But he explains that the aunt is the only person who speaks French in their extended family. “My sister…but her French is probably worse than mine because she lives in the U.S. now and for 20 plus years.” But he also suggests his sister still feels this cultural connection to French, evident when she uses the language with her nieces and nephews.

While never regretting their choice, parents did raise possible concerns, acknowledging that there were any number of individual differences that could affect their child’s ability to learn two languages. They all expressed the need to be mindful of the rate at which their children were developing language with the possibility of shifting course, if required. This is in line with the observations of Paradis et al. (2021) that, “There is a great deal of individual variation among children with regard to how quickly they learn an L2” (p. 183).

As Nigel’s mother explained: “It was never a ‘Well, too bad you're going to learn it’. It was more of a, ‘Well, we're going to try this. And if you don't pick up language as easily as you should and it's hindering your academics or whatever, then of course, I mean, we're going to do what's best’.” She explicitly stated that once the foundation of the language was in place, she would be less concerned if he needed to switch to an English school. “For me it was more to make sure that they had the French language down. Like I wanted to make sure that they spoke it, they spoke it well, and they were able to use it. And then once that was kind of anchored and I knew that we were good, then we started introducing more English.”

Gloria’s mother explained how she got over her angst. “I was worried about, you know, how she would succeed in a school environment. And as a parent, you just want, you know, to make clear the way. So, it's as easy as possible with the least amount of challenges as possible. And I was, worried about French being a challenge as opposed to an asset.” But given the

reassurance she received that she could change course if needed, she went on to say, “It was a non-issue. I think you helped with how to deal with the, the issue of what if it doesn't work. Like you basically said like if it doesn't work, then you just change your schools and that's it.”

Emerson’s mother commented: “I’ve felt that I would be better equipped to help in a French environment. But I had always said at the time that if he could not get proper support. he would go to English where he would get support.”. Indeed, when support for Emerson’s additional exceptionalities were not met in the French minority school system, she reluctantly moved him into the French immersion system. Finally at the high school level, Emerson’s needs were met best in the English system. But his mother maintains the French spoken language communication in the home and believes that she made the move at a time where Emerson’s skills were already well established in French.

Rebecca’s father described ignoring advice not to enroll their daughter in the minority French school despite English being spoken exclusively in the home. He explained that: “At the end of the day, we just decided, you know what, it's something we want to try. And if she's struggling, then, well, we can always switch her to English.” He continued to explain: “We realized, okay, this school can offer us a lot of resources. And in it they proved, you know, almost too overwhelming at times when it came to resources, but we were able to tailor to tailor it to what [our daughter] needed. And she seemed to be doing well with it.”

Parents of hearing children may also struggle with the decision to pursue a second language academically, however, with the added challenge of a hearing loss, these families understood that they may have had more at stake. As Crowe & Guiberson (2021) note, professionals must realize that parents want reassurance that speaking two languages will be possible. Parents know their child will face additional challenges in learning the minority

language while also learning the majority language. These families chose spoken language bilingualism and enrolment in minority French schools for their deaf children. They weighed all the options and decided the benefits were worth it. As Gloria's mother puts it, "The French was not going to be the problem. It was going to be the hearing component no matter what the, the material was."

5.5 Limitations

This study has been an attempt to shed light through empirical research on a new population of deaf students (i.e., those enrolled in French-Minority schools), and it is among the first investigations with this focus. It is also distinctive in that the data was collected in two spoken languages.

While there are only four participants in this multiple-case study, the sample size is reflective of the small number of deaf learners in the minority francophone setting. As well, the in-depth descriptions of the students allow for the potential applicability of the findings to different contexts (Creswell & Poth, 2018). That said, it would not be appropriate to make broad generalizations based on these findings.

The four students in this study were from well-resourced homes with parents who were able to actively support language and literacy development. They also benefited from early identification and early fitting and use of high-performance hearing technology. All parents had high educational expectations for their children that included bilingualism (Cupples et al., 2017). Early intervention and bilingualism were among the families' overall goals for their children. In this respect, they may not be a representative sample of the heterogeneous group of deaf learners overall.

In addition, this study relies on the recollections of the study participants including memories from a highly stressful time when parents learned their child had a hearing loss. These recollections can be influenced by the way memories are formed, reformed, and transformed depending on the number of times stories have been retold, the strength of the initial memory, and the integration of new information (Nadel et al., 2012). That being acknowledged, these recollections do represent the views of both parents and the children in their own words.

Chapter 6: Conclusion

This mixed methods case study may represent one of the only investigations of the spoken language learning experiences of deaf learners growing up a in a dominant English-language environment while being educated in an official minority language (i.e., French) in Canada. The findings suggest that the four deaf participants are balanced French-English bilinguals in that they evidence age-appropriate achievement in both spoken and written French and English. While there were some differences among the home language environments, all four families made a conscious decision to choose bilingualism for their child, even in the face of advice to the contrary from some professionals. They acknowledged the challenges of French minority language maintenance in an English dominant environment, and as such, were diligent in managing their child's hearing technologies and in exposing their children to both languages in and outside of the home. Despite the challenges faced, these parents value bilingualism and are proud of their decision to make this option possible for their children.

6.1 Implications for Research

Given that globally, spoken language bilingualism or multilingualism is commonplace and bilingualism rates are rising (Byers-Heinlein et al., 2019), it would be reasonable to suggest that there will be an increased need for investigations of all bilingual learners, including those with additional exceptionalities such as hearing loss (Cummins, 2014; Genesee 2007). However, in considering the current state of the knowledge with respect to spoken language bilingualism and deaf students, a fair observation would be that there is a relative paucity of research and studies of spoken language bilingualism and deaf learners remain limited (e.g., Bunta & Douglas, 2013; Bunta et al., 2016; Guiberson, 2013). To this end, this study represents one attempt to add

to this body of research by investigating the achievement of a small group of deaf learners growing up as spoken language bilinguals.

Future investigations are needed to interrogate not only levels of achievement in spoken language bilingualism and biliteracy, but the factors that contribute to these outcomes (e.g., demographic factors, use and management of hearing technologies, nature and level of early intervention, home language environment, experiences, educational setting and supports). Motivation for learning the second language is an additional factor (see Gardner et al., 1976; Lapkin, 2003; Lappin-Fortin, 2014) that can play a role and warrants further consideration. This study also highlighted the counselling and decision-making process of the four families who were opting for spoken language bilingualism. While these is some research in this area from Australia, the UK and the USA (Ching et al., 2018; Guiberson, 2013; Wright et al., 2023), there is none that has examined the parental experience of choosing bilingualism in the Canadian context.

In addition, it would be critical that these investigations reflect the complexities of the myriad bilingual contexts deaf children can experience (e.g., in officially bilingual countries, across various languages). In the Canadian context, this would include focussing on deaf students in both French immersion programs and French-language schools, as well those whose families speak a minority language other than French in the home. This circumstance is increasingly likely as French-language schools have broadened their admissions to engage the immigrant allophone community (Farmer, 2008; Prasad, 2012); it is possible that some of these students have language experience in two minoritized languages at home (e.g., French and Cantonese) and the dominant language (i.e., English) in the community. Many school boards today are educating deaf learners whose home language is not the dominant language of the

community (Gallaudet Research Institute, 2011; Mayer et al., 2021), and a worthy follow up would be to investigate spoken bilingualism for those whose home language is not officially represented in the school system.

Undertaking this research has also revealed potential methodological considerations for future researchers engaging in investigations of spoken language bilingualism. Standardized measures are optimal for making meaningful comparisons across studies and participants, but in designing a study it can be challenging to identify comparable standardized measures in two languages with a representative normative sample relevant to their study participants (e.g., the CELF-5 is available in both French and English, but the normative sample for the French version was not available beyond age 16:11 in contrast to age 21:0 for the English version). It may also be the case that the most recent versions of a standardized test may be available in one language and not another (e.g., there is a fourth edition of the WIAT in English but only a second edition in French). As well, French literacy tests that are normed on francophone students may not provide a fair assessment for anglophone or allophone students educated in French immersion classrooms or learners enrolled in minority French schools where the community and home language is the majority English language (Canadian Language and Literacy Research Network, 2009). It would be important in planning and designing future studies, that researchers account for these realities.

6.2 Implications for Policy and Practice

The families in this study represent a group who reasonably could have maintained the majority language as the only spoken language in the home, but from the outset made a deliberate choice for spoken language bilingualism. They expressed confidence that their children would become bilinguals and did not lower the bar because of the hearing loss. Nigel's

mother says that communicating with Nigel in French is not different than with her hearing daughter: “I never, I don't think I have anyways, treated him like he has hearing loss. …I don't think of it”.

In some sense they could be seen as trailblazers. They were making these decisions more than 10 years ago when there was scant evidence in support of this choice, often going against professional recommendations (Simpson, 2023). They also managed this in an environment in which appointments and early intervention were typically provided only in the majority language, with bilingualism being less common in the wider community.

As such, the findings from this study can shed light on the need for shifts in policy and practice that will improve the experience for families and their deaf children in the future. Viewed through a multilingual lens (Cummins, 2014; Cummins et al., 2017; Lotherington, 2011), parents of deaf children could shift their focus from using the dominant language (e.g., English) to being expert models of their home language, engaging their children in rich, meaningful interactions (Archbold & Mayer, 2012). There are also socioemotional benefits to encouraging parents to speak their first language with their child, specifically around well-being (Paradis et al., 2021). They are better able to communicate their values, beliefs, understandings, and wisdom for life through the “the language of my [their] heart” (Fritz & Brock, 2019, 15:25).

There are two key points to highlight regarding making these policy and practice shifts. The first is that professionals need to become more confident presenting spoken language bilingualism as an option for families of deaf children with any degree of hearing loss. Historically, deaf learners have been denied both access and support in this regard (Arnett & Mady, 2018; Genesee, 2007; Guiberson, 2005; Hartman et al., 2019: Mady, 2015). However, As Kay-Raining-Bird and colleagues wrote in 2021, “Despite documented evidence of the overall

effectiveness of dual language education and of the benefits of individual bilingualism, there is a serious lack of research on the suitability and effectiveness of such programs for students with diverse background characteristics and learning needs and, in particular, children with special education needs" (p. 194).

In the case of francophone minority learners, the issue is even more critical because in Canada, French-language education is a constitutional right and for deaf learners from francophone homes, accessing French-language education is not only a question of equity of access but also equity of support. Emerson's mother admitted that she always knew that Emerson may need to move out of the French-language school to access the support he required. While French immersion remains an option (but not a right) for anglophone and allophone students including those who are deaf, in many areas of the province, the option remains a "lottery." For example, "entry into the French immersion program is determined through a digitally randomized lottery system" (Simcoe County District School Board, 2025).

A broader, more robust evidence base demonstrating the spoken language bilingual achievement of deaf learners in French language and French immersion programs would provide practitioners and policy makers with the data to support parents in making an informed choices and bilingual educational options for their deaf children. At the very least, it should end the practice of counselling parents that bilingualism is not an achievable goal nor a viable educational option.

This study has also shed light on the factors that are supportive of success when pursuing a bilingual option. These include early identification of hearing and access to hearing technology and consistent use of this technology. This would be in line with research focussing on monolingual deaf learners that have demonstrated the benefits of early identification for literacy

development (Pimperton et al., 2014) and the long term reduced societal costs (e.g., enhanced educational opportunities, higher income earnings) of early access to hearing technology (Céjas et al., 2024).

Families report that making language choices and finding the appropriate educational setting for their child can be challenging. Wright et al. (2023) found that for both bilingual and multilingual families, accessing professionals who provided positive and consistent messages in support of speaking more than one spoken language to their deaf child was particularly challenging. Although they did encounter some negativity regarding spoken language bilingualism as an option, overall, the four families in this study described positive interactions with professionals who believed in their choices. This was empowering and made a positive difference, underscoring the need for practitioners to be supportive – an understanding that needs to be underscored in early intervention practices and highlighted in programs educating professionals in the field.

The parents also reported that the educational supports their child received was a key factor contributing to their achievement. Rebecca's mother reported that it was the one-to-one instruction her daughter received that was critical to her success, noting that Rebecca had greater success learning French than her typically hearing siblings who did not benefit from this kind of individual instruction. This observation regarding the need for ongoing, appropriate educational support is important at a time when services for deaf students are being curtailed or even eliminated (Dettman, 2022; Todorov et al., 2021). As some researchers have noted, these deaf learners have become victims of their own success (Millett, 2024).

The findings from this study also indicate that the motivation and commitment on the part of the learner and their family to achieve bilingualism is important, and this was evident in the

deliberate ways in which choices were made about language use and providing exposure to both languages that included robust home literacy practices. This included turning on captions for any exposure to French or English media, a practice that it is supportive in the development of literacy skills (Gernsbacher, 2015). As Gloria's mother noted, "We always have the captions on…I think it's a good way to build vocabulary because you are seeing the words". Rebecca likes to watch programs with just the captions (i.e., the sound off) or through her Airpods because she doesn't "like the quality" of the sound through her hearing aids. As Peets et al. (2022) observed, home literacy practices of typically hearing bilingual learners had a positive impact on their overall reading comprehension, and it could be argued that this was the case with the deaf students in this study as well. Practitioners could take a cue from the experiences of these families to inform how they advise other families of deaf learners, providing direction as to how to create the most supportive environment for developing bilingualism for their children.

6.3 Identity and Bilingualism

While investigating the question of identity was not an explicit research question at the outset of this investigation, it has emerged as an additional theme that warrants comment. This is especially relevant given the debates in the field as to how individuals with hearing loss identify in a context where hearing technologies have afforded access to spoken language for most deaf individuals. The questions that have come up in the literature over the past two decades include: Does a deaf person with a profound hearing loss who uses cochlear implants identify as deaf? As hard of hearing? As culturally Deaf? (Chapman & Dammeyer, 2017; Goldblat & Most, 2018; Wald & Knutson, 2000).

"The salience of particular aspects of our identity varies at different moments in our lives. The process of integrating the component parts of our self-definition is indeed a lifelong

journey" (Tatum, 2000). At the time of this investigation, all four young people identified themselves as deaf even though they have varying degrees of hearing loss, use a range of hearing technologies, and do not rely on signed language for communication. However, deafness did not predominate as a focus in their conversations about identity and it was only Rebecca who spoke about it at any length. "I'm at the point where I don't really care to know like other deaf people, like, I don't know. It's just like, it doesn't really matter to me anymore. Like I, I'll make my own friends and like, being deaf is like, it's obviously a part of my life, but like, it's not to the point where I need to like, have to know other people."

Rebecca recalled trying to connect with other deaf individuals when her parents took her to a local Deaf club. "As a kid, I would try. I would try to go to the deaf access community, and like just go hang out with them at their meetings but I just found that, I didn't really click with anyone…those guys were like, they were even more deaf than me. Like, they had, they used sign language. I did not know sign language. I still don't know sign language. They had cochlear implants and like, even if they could speak, they preferred to speak in sign language anyway, and so they had their own little thing going on already. So I never, like, fit in with them really. So I mean, I tried I guess a little bit as a kid."

She went on to say, "I don't even know who I identify myself as but it's not hearing aids. I'm not an athlete. I like reading and writing, but I don't know, even then, I don't know if I identify myself as that - just as a person, I guess. I'm [Rebecca]. Most people with, with a disability. You really don't like being identified with it. Like I'm Rebecca and like, if you're meeting someone for the first time it's not 'I'm Rebecca and I'm hard of hearing', right? That's not what you say right? And I barely even think of it, to be honest."

Nigel believes his identity relates most to his extracurricular activities, especially as a hockey player, and he does not think of himself in terms of being a deaf or hard of hearing person. He knows two other hearing aid users in his school but they are just his friends because they are his friends – not because of their hearing loss. He recognizes that his hearing loss is part of who he is, but it does not define him. Like Nigel, Gloria does not see her deafness as defining her. Instead, she places more importance on her other talents such as horse-back riding or singing and on her attributes such as her love of animals and ability to make friends.

Emerson states very clearly that he is deaf but he attaches much more importance to his other qualities. “I'm not the kind of person who wants to be popular …I’m kind of special, as if you haven’t talked to my parents about me yet. I’m just a variant of normal.” He also describes himself as a perfectionist and self-advocate. On several occasions, he makes a point to describe himself in terms of his mixed ethnic identity.

Overall, these young people made comments indicating that they are proud of their bilingualism and their ability to speak both French and English. This aspect of their identity was strong and as Nigel’s mother proudly shared: “when it came time to enroll him in JK in French, when we went to the interview at school, they actually wrote on his file that he was a francophone and I was like, okay, I did my job right?”.

6.4 Final Thoughts

Meaningful access to spoken language via hearing technologies is now possible for most deaf children and this has afforded them the opportunity to acquire the language of their home from birth. This has altered the landscape of deaf education, opening the door to spoken language bilingualism and a bilingual education. This has also meant that most are now being educated alongside their hearing peers where English or French is the language of instruction

(Archbold & Mayer, 2012; Mayer & Trezek, 2018). What is lacking are investigations of how children and their families are faring in this relatively new reality, given the many ways in which bilingualism can be realized.

This study has captured one example, that of deaf children attending French-language minority schools, with a focus not only on linguistic achievement but on the wider family context. To date, few studies have examined the language and literacy possibilities for deaf learners when exposed to two spoken languages from birth (i.e., simultaneous bilingualism) or within the early years (i.e., sequential bilinguals) (Simpson & Mayer, 2023). Findings indicate that age-appropriate (or better) language and literacy levels in two spoken languages is possible, counter to claims that deaf children are not achieving literacy levels commensurate with their peers (Moeller & Tomblin, 2015). It bears repeating that all four deaf learners in this study not only have average to above average language and literacy skills in one language, but they have achieved similar proficiencies across two. Given the long history in deaf education of poor achievement in these areas in even one language (Bolen, 1981; Meadow-Orlans et al., 2003; Crowe et al., 2014, Mayer & Trezek, 2020; Simpson & Mayer, 2023), it would be fair to characterize these outcomes as remarkable.

This study contributes to the nascent but growing body of research investigating the issue of spoken language bilingualism and deaf learners. The critical take-away is that professionals, practitioners, and policymakers in deaf education must recognize that a diagnosis of hearing loss does not preclude bilingualism or even multilingualism as an achievable goal for deaf children and their families. Instead, families should be empowered. They need to be reassured that with early identification and access to spoken language through hearing technology, and the appropriate follow up support in the home and in educational settings, their child can achieve

language and literacy levels commensurate with their typically hearing peers. This affords them the opportunity to become deaf bilingual sailors, hockey players, horse-back riders, and authors – goals to which the students in this study aspire.

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Appendices

Appendix A: Student Interview

Guiding Questions for the Student Interview:

1. What age were you when you began communicating in spoken English and with whom?
2. What age were you when you began communicated in spoken French and with whom?
3. Finish this sentence for me in as much detail as you can: "When I read I feel…".
4. Tell me about the types of books that you like to read. (additional prompt) Do you like picture books, graphic novels, biographies, fiction or science-fiction books?
5. Describe the types of strategies that you use to make sure that you can follow along with read-alouds in your classroom? (does your teacher have an FM system that is used?)
6. When you read to yourself for pleasure at school, how do you pick the book you are going to read in English or in French or both? (do you go to the library, is there a selection of books in your classroom, do you bring books from home?)
7. Describe the hardest part of reading in French and what you do when you do not understand a text.
8. Describe the hardest part of reading in English and what you do when you do not understand a text.
9. Do you ever write stories? Describe the steps you take before writing a narrative in either French or English.

Appendix B: Parent Interview sample

Guiding Questions for the Parent Interview

1. In order to participate in this study, you have identified that your child is both deaf or hard of hearing and enrolled in a minority French school. When it was time to enroll your child in school, did you meet with any challenges at enrolment time? If so, please describe the various challenges that you faced.
2. Why did you enroll your child in the minority French school?
3. If you ever considered enrolling your child in the French immersion school, English public school or another school option, why did you select the minority French school?
4. Please describe the types of early intervention activities that you and your child participated in prior to enrolment in elementary school.
5. Who were the personnel in attendance at your transition to school meeting upon enrolling your child in school?
6. Throughout your child's school career, can you describe the types of supports that they received from educators or therapists outside of the general education classroom?
7. How has literacy been important in your home environment?
8. When selecting media, what is the primary language of your viewing options?
9. Do you employ any types of assistive technology for your child (e.g., closed captioning) when viewing media?
10. Please describe some of your family's leisure activities.
11. Describe the types of any community group activities that your family has participated in.
12. Please describe any habitual interactions that you may have with extended family who speak French? (e.g., holiday gatherings)

Appendix C: York University Ethics Approval Certificate

OFFICE OF RESEARCH ETHICS (ORE)
309 York Lanes

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Certificate #:	**STU 2022-010**
Approval Period:	**01/27/22-01/27/23**

ETHICS APPROVAL

To: **Melanie Simpson**
Graduate Student of Education
melanielsimpson@gmail.com

From: Alison M. Collins-Mrakas, Director, Research Ethics
(on behalf of You-ta Chuang, Chair, Human Participants Review Committee)

Date: Thursday, January 27, 2022

Title: **Language And Literacy Achievement Of Deaf Students In Minority-French Settings**

Risk Level: ☒ Minimal Risk ☐ More than Minimal Risk

Level of Review: ☒ Delegated Review ☐ Full Committee Review

I am writing to inform you that this research project, **"Language And Literacy Achievement Of Deaf Students In Minority-French Settings"** has received ethics review and approval by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

Note that approval is granted for one year. Ongoing research – research that extends beyond one year – must be renewed prior to the expiry date.

Any changes to the approved protocol must be reviewed and approved through the amendment process by submission of an amendment application to the HPRC prior to its implementation.

Any adverse or unanticipated events in the research should be reported to the Office of Research ethics (ore@yorku.ca) as soon as possible.

For further information on researcher responsibilities as it pertains to this approved research ethics protocol, please refer to the attached document, **"RESEARCH ETHICS: PROCEDURES to ENSURE ONGOING COMPLIANCE"**.

***Please note** that due to ongoing changes with the pandemic, all researchers must review the procedures on the YuBetter website (Section: Coming to Campus) as there may be changes to protocol requirements.*

Should you have any questions, please feel free to contact me at: 416-736-5914 or via email at: acollins@yorku.ca.

Yours sincerely,

Alison M. Collins-Mrakas M.Sc., LLM
Director,
Office of Research Ethics

Appendix D: Parent Questionnaire

Complete the following questionnaire in your language of choice. If you have any questions, please ask. Please print.

Date :

A. Learner information

1. Your child's full name : ____

2. Date of Birth :

3. Please indicate your child's current listening technology: (select all that apply)

    - o Bilateral cochlear implant
    - o Unilateral cochlear implant
    - o Bilateral hearing aids
    - o Unilateral hearing aid
    - o Bilateral Bone-conduction hearing aids
    - o Unilateral Bone-conduction hearing aid

4. Please indicate the primary language of communication in the home.

    - o French
    - o English
    - o Both French and English equally

5. How old was your child when his/her hearing loss was identified:

6. Please indicate the cause of your child's hearing loss (check one)

    - o Genetic
    - o Syndrome

- o Unknown
- o Other (please specify)

7. How many years has your child been reliably wearing listening technology (i.e., hearing aids or cochlear implants)?
8. Does your child wear his/her listening technology at home?
    - o Yes
    - o No
9. Does your child use the Bluetooth technology to connect to media technologies such as smartphones, smart television etc.

B. Early Intervention/Preschool & Daycare services

10. Did your child receive any services prior to school entry to support listening and language development? (e.g., Preschool home visiting by qualified teacher of the deaf, auditory verbal therapy, speech language pathology)
    - o Yes
    - o No
11. If you answered 'yes' to question 11, please indicate the services that you received and the language of the service provider and include the duration of the service.

12. Did your family receive support to make decisions towards a transition to school?
    - o Yes
    - o No
13. If you answered 'yes' to question 13, please indicate the type of support you received.

14. Please indicate the type of preschool and daycare services that your family employed for your child prior to school entry and indicate the primary language of the service.

C. Formal Education

15. Did your family participate in a transition to school meeting prior to school entry?
    - o Yes
    - o No
16. Has your child been enrolled in the minority French school since Junior Kindergarten? If not, please indicate the grade when your child was first enrolled in French school.
    - o Yes
    - o No ____________________________________
17. What type of educational program does your child currently attend (check one).
    - o Fully inclusive general education classroom with hearing peers
    - o Partial inclusion, spending time in general education class and resource room/self-contained class
    - o Full time self-contained classroom for children with hearing loss or additional exceptionalities
    - o Other (please indicate)
18. Does your child currently receive support from a qualified teacher of the deaf? If so, to what degree do you believe your child is being supported? (check one)
    - o Daily withdrawal for approximately one hour
    - o Weekly withdrawal for approximately one hour
    - o Bi-weekly withdrawal for approximately one hour

- Monitoring of listening technology and IEP writing/meetings
- No teacher of the deaf support

19. Please indicate any additional reading and writing support that your child has received in the past year either at school or outside of school and indicate the language of support.
    - No additional reading or writing support received (English/French)
    - In-school Reading recovery program (English/French)
    - Outside of school tutoring (English/French)
    - Other (please specify)
20. Are there any additional support personnel who work directly with your child on a regular basis in the school setting (check all that apply)
    - Learning Resource Teacher/Special Education Teacher
    - Educational Assistant
    - Auditory Verbal Therapist
    - Sign Language Interpreter
    - Occupational Therapist
    - Physical Therapist
    - School Psychologist
    - Provincial School Teacher of the deaf Consultant
    - Educational Audiologist
    - School Social Worker
    - Other (please indicate)
21. Please indicate the types of additional accommodations that your child may receive (check all that apply)

- o Captioning
- o Personal hearing assistive technology (e.g., FM system, Soundfield system)
- o Preferential seating
- o Extended time for assessment
- o Quiet work-space
- o Course exemption
- o Peer Tutoring

D. **Family Background**

22. What is your linguistic status (check one)

- o Anglophone
- o Francophone
- o Allophone (please specify language) ______________________

23. What is the primary language spoken in your home:

- o French only
- o English only
- o 50% French, 50% English
- o Primarily French plus additional second language (indicate the second language here) ___________________________

Language and Literacy Practices in the Home

24. When you read for pleasure, which language do you read in?

- o English only
- o French only
- o Equally English and French

- Primarily English plus an additional language
- Primarily French plus an additional language

25. In your estimation, what number of books do you have in your home?
    - Less than 10 books
    - Between 10 and 50 books
    - More than 50 books
26. How often do you estimate that you visited the community library with your child over their lifetime.
    - Never
    - Less than 10 times
    - 10 to 50 times
    - Hundreds of times
27. How often was your child read to in the home before they became an independent reader?
    - Occasionally
    - Once or twice weekly
    - Daily
    - More than once daily
28. If you were participating in a writing activity, which language would you prefer to write in?
    - French
    - English
    - Other (please indicate the language)
29. What types of writing activities do you perform? (select all)

- Journal writing
- Letter writing
- Email writing
- Report writing
- Creative writing
- Other ________________________

30. Does your family participate in community sports programs? If so, which language is the coaching given in?
    - English
    - French
    - Other (specify) _____________________

31. If you were communicating with your child via text messages, which language would you most likely communicate in?
    - French
    - English
    - Other (please specify) ____________________

32. Which language do the members of your family primarily read and write in?
    - English
    - French

Other (please specify) ____________________

Appendix E: CAP-II

Categories of Auditory Performance -II (CAP -II)

0	**No awareness of environmental sound**
1	**Awareness of environmental sounds**
2	**Responds to speech sounds**
3	**Identifies environmental sounds**
4	**Discriminates speech sounds**
5	**Understands phrases without lip reading**
6	**Understands conversation without lip reading**
7	**Uses the telephone with known speaker**
8	**Follows conversation in a reverberant room or where there is interferent noise, such as a classroom or restaurant**
9	**Use of phone with an unknown speaker in an unknown context**

Appendix F – SIR

The Speech Intelligibility Rating Scale (SIR)

Category 1	Pre-recognizable words in spoken language.
Category 2	Connected speech is unintelligible but is developing for single words.
Category 3	Connected speech is intelligible to a listener who concentrates and lip reads within a known context.
Category 4	Connected speech is intelligible to a listener who has little experience of a deaf person's speech. The listener does not need to concentrate unduly.
Category 5	Connected speech is intelligible to all listeners. The child is easily understood in everyday contexts.

Appendix G: Example Table for Analysis

Participant: Rebecca

Assessment Measure	Date	Results	Quotes
CELF FR			Cause like I - I understand French very well when I'm hearing, its just like, sometimes when I hear people talk it's that I wouldn't have phrased it like that but it makes sense but I wouldn't have phrased it like that and it's just what they did was right and what I would have done is wrong its just that I wouldn't phrase it like that. But it's probably they are naturally French and I am not. I don't like how French has all those little like, you have to put il and elle why can't you just be straightforward.
CELF - ENG			
WIAT – III ENG			
WIAT – II FR	27 avril See transcripts for examples of identity and storytelling, sequencing skills.		• I find I read it faster when I read it aloud to myself, but the speed isn't the thing, so it doesn't actually matter. 23:59 • Whatever is easier for you to hear and understand. And if you need to repeat back, like that's okay too. 24:07 • Okay. I'll read out loud. Later… "A lot of big numbers that I couldn't pronounce in French!". 26:54 Que veut dire le mot remémorer dans la quatrième paragraph? Retenir dans ta memoire – or um - no I'm going to say that. Or I could say partager avec les autres – le dire… No I'm going to say that – retenir dans ta mémoire. Est-ce qu'il y a un autre mots que tu peux dire pour la meme chose? Retenir dans ta memoire? Souvenir? 33:51 • 46:36 • Oh, my French grammar is terrible, actually. 46:50 • Terrible. Like, Oh, this is not going to go well.
CAP	Feb 22		
Parent Questionnaire			
Parent Interview			

Appendix H: Informed Consent Forms

Informed Consent Form (parent)

Date: ______________________________

Study Name: Literacy Achievement of Deaf Students in Minority-French Settings

Researcher:

Melanie Simpson – Graduate Student – Doctorate in Philosophy

Faculty of Graduate Studies in Education at York University

Contact information: melanie.simpson@edu.yorku.ca or the office of Graduate Studies in Education at gradprogram@edu.yorku.ca

Sponsor: York University

Purpose of the Research: The purpose of this mixed-method case study is to explore the early literacy practices and experiences of deaf children enrolled in French minority schools and their families. The research will rely on the collection of qualitative data through interviews and questionnaires and quantitative data collected through literacy assessments. Findings will be reported in a doctoral dissertation paper in the form of a case study.

What you will be asked to do in the research:

As participants, you may be asked to provide permission to allow your child to be assessed during after school hours in the areas of literacy. Assessments will not exceed one hour increments. Additionally, you will be asked to participate in two one hour interviews.

Risks and Discomforts:

There are not any anticipated risks or discomforts related to the interview or assessment process as I seek to use short time periods to collect assessment data. Adult interview data will cover areas related to literacy practices, language uses and decision-making process related to the decision to enrol their deaf child in a French minority school.

Benefits of the Research to the Participant and Benefits to the Researcher:

The case study is an interesting way to view the language and literacy practices in the context of current research. You may benefit from the research by seeing your child's development in light of the research presented.

The researcher benefits from the study in that it consolidates information that has been informally studied through years of work and formal studies towards the completion of the PHD program.

Voluntary Participation:

Your participation in the research is completely voluntary and therefore, you may choose to stop participating at any time. If you choose to stop participating, the decision will not influence the relationship or the nature of the relationship with this researcher or with staff of York university now or in the future.

Withdrawal from the Study:

You may stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating or to refuse to answer particular questions will not affect your relationship with the researchers, York University, or any other group associated with this project. In the event that you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

Confidentiality:

The interview documentation will not be associated with any identifying information. The previously recorded sessions of you and your child will be transcribed and not be shared with any party beyond this researcher. The video recordings are stored on a secure hard drive. Hand-written notes will be stored in a locked cabinet. The data will be stored only until the completion of the written dissertation. Upon completion, this researcher's copies will be shredded and video recordings will be deleted from the hard drive. Confidentiality will be provided to the fullest extent possible by law.

Questions about the research:

If you have any qu4estion about the research in general or your role in the study, then you should contact myself, Melanie Simpson, directly at melanie.simpson@edu.yorku.ca. Also, you may contact my supervisor, Professor Connie Mayer at cmayer@edu.yorku.ca. The Graduate Program office in Education may also be contacted for any further questions at gradprogram@edu.yorku.ca.

This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics Guidelines. If you have any questions about this process, or about your rights as a participant in this study, you may contact the Senior manager and Policy Advisor for the Office of Research Ethics, 5th Floor, York Research Tower, York University or email ore@yorku.ca.

Legal Rights and Signatures:

"I ______________________________, signing on behalf of my minor child, consent to participate in Literacy Achievements of Deaf Students in Minority-French Settings. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent."

Name of Participant: _________________________ **Date: _______________**

Signature of Participant's Parent:_____________________ **Date: _______________**

Parent's relationship to the participant: _________________________

Informed Consent Form (for minor child)

Date: ______________________________

Study Name: Literacy Achievement of Deaf Students in Minority-French Settings

Researcher:

Melanie Simpson – Graduate Student – Doctorate in Philosophy

Faculty of Graduate Studies in Education at York University

Contact information: melanie.simpson@edu.yorku.ca or the office of Graduate Studies in Education at gradprogram@edu.yorku.ca

Sponsor: York University

Purpose of the Research: The purpose of this case study is to explore the early literacy practices and experiences of deaf children enrolled in French minority schools and their families. The research will rely on the collection of qualitative data through interviews and questionnaires and quantitative data collected through literacy assessments. Findings will be reported in a doctoral dissertation paper in the form of a case study.

What you will be asked to do in the research:

As participants, you may be asked to provide permission to allow your child to be assessed during after school hours in the areas of literacy. Assessments will not exceed one hour increments. Additionally, you will be asked to participate in two one hour interviews.

Risks and Discomforts:

There are not any anticipated risks or discomforts related to the interview or assessment process as I seek to use short time periods to collect assessment data. Adult interview data will cover areas related to literacy practices, language uses and decision-making process related to the decision to enrol their deaf child in a French minority school.

Benefits of the Research to the Participant and Benefits to the Researcher:

The case study is an interesting way to view the language and literacy practices in the context of current research. You may benefit from the research by seeing your child's development in light of the research presented.

The researcher benefits from the study in that it consolidates information that has been informally studied through years of work and formal studies towards the completion of the PHD program.

Voluntary Participation:

Your participation in the research is completely voluntary and therefore, you may choose to stop participating at any time. If you choose to stop participating, the decision will not influence the relationship or the nature of the relationship with this researcher or with staff of York university now or in the future.

Withdrawal from the Study:

You may stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating or to refuse to answer particular questions will not affect your relationship with the researchers, York University, or any other group associated with this project. In the event that you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

Confidentiality:

The interview documentation will not be associated with any identifying information. The previously recorded sessions of you and your child will be transcribed and not be shared with any party beyond this researcher. The video recordings are stored on a secure hard drive. Hand-written notes will be stored in a locked cabinet. The data will be stored only until the completion of the written dissertation. Upon completion, this researcher's copies will be shredded and video recordings will be deleted from the hard drive. Confidentiality will be provided to the fullest extent possible by law.

Questions about the research:

If you have any question about the research in general or your role in the study, then you should contact myself, Melanie Simpson, directly at melanie.simpson@edu.yorku.ca. Also, you may contact my supervisor, Professor Connie Mayer at cmayer@edu.yorku.ca. The Graduate Program office in Education may also be contacted for any further questions at gradprogram@edu.yorku.ca.

This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the

Canadian Tri-Council Research Ethics Guidelines. If you have any questions about this process, or about your rights as a participant in this study, you may contact the Senior manager and Policy Advisor for the Office of Research Ethics, 5th Floor, York Research Tower, York University or email ore@yorku.ca.

Legal Rights and Signatures:

"I ______________________________, signing on behalf of my minor child, consent to participate in Literacy Achievements of Deaf Students in Minority-French Settings. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent."

Name of Participant: _________________________ Date: _______________

Signature of Participant's Parent:_____________________ Date: _______________

Parent's relationship to the participant: _________________________

Appendix I – Gloria Uncorrected Writing Sample

Si j'étais présidente

Si j'étais présidente du conseil des élèves, j'apporterais des activités éducatives et amusantes pour tous les élèves. En plus, il y aura des journées thème ou sans uniforme. J'aiderais à créer des clubs tel que
Club de Danse,
De différentes langues,
et des activités ou tu pourrais avoir des crédits pour le Collège et/ou L'université.
Je vais essayer de mon mieu de vous rendre content et instruit d'une bonne façon. Je veux que vous soyez content d'être à l'école. (Je sais, c'est parfois difficile.)

Il y a d' autres présidents qui avaient promis des choses incroyables et l'ont pas délivré. Mais, moi je vais changer ça. Quand je pense à nous, les étudiants, nous voulons des choses qui ne nous donneront pas d'éducation mais qui nous feront passer un bon mémoire. Moi aussi.
Je veux ajouter au menu de la cafétéria et avoir plus de diverses options.

Appendix J – Emerson Uncorrected Writing Samples

Characters

Name: Thessa
Gender: female Other: Is bi-polar
Pronouns: (she/her)
Squadron: 1st hunting squadron HS – 14
Calls: Poker 2, Ember
Position: Wing
Physical descriptions: blonde, wavy, shoulder-length hair, average height, slightly stocky build, white and slightly freckly,
Adjectives: rule-abiding, strict, curious, adventurous

Name: Max
Gender: male
Pronouns: (they/them)
Squadron: 5000 ft. aerial cavalry (Heavy CAC)
Calls: Owl
Position: hunter
Physical description: short, straight, black-brown hair,
Adjectives: independent, shy, curious, merciful

The scene:A clear sunny day, over Murrian lines
The actor: A young female Morati pilot whose name is
The dilemma: Illegally carrying an aid package and a letter to an expat
The cause: Few agents caused Moratia to attack Murria
The scene: A mostly sunny day somewhere in no-man's land
The actor: Male Murrian pilot
The dilemma: Whether or not to spare Morati when he recently disarmed

Appendix K – Rebecca Uncorrected Writing Samples

My Dark Vanessa (sample paragraph)

The novel, *My Dark Vanessa*, written by Kate Elizabeth Russell, is a text that is very impactful when analyzed through the reader response critical theory due to its close relation to recent and current events in today's world revolving around sexual abuse, such as the Epstein case and the #MeToo movement. *My Dark Vanessa* portrays the public harassment that many victims of sexual abuse face when attempting to speak out on their trauma and experience with this type of abuse. In fact, part of the novel, *My Dark Vanessa*, is set in 2017, the prime of the #MeToo movement: a movement which received an abundance of retaliation and hate from society, accusing many participants of this movement of being liars. One woman in the novel speaks out on the sexual abuse she has endured at the hands of Mr. Strane, her former teacher, and as a result, she receives horrifying backlash from society when Strane kills himself due to her allegations. The novel depicts society's warped perception of victimhood, and the common cynical belief that victims of sexual abuse are liars and that their claims are false as it describes

Cuisson #1 (sample paragraph)

Cuisson #1 Guide alimentaire canadien: bols de pita

Le repas que mon groupe et moi avons préparé cette semaine: les bols de pita, représente bien les portions du guide alimentaire Canadien 2019. Comme le recommande le guide alimentaire Canadien 2019, la moitié de notre assiette est composée de légumes colorés. Notre choix de légumes est le suivant: la laitue, les tomates, les concombres, les oignons violets, et les olives noires. Ces légumes sont très bénéfiques car ils offrent de nombreux nutriments car ils regorgent de nombreuses vitamines et minéraux, et s'avèrent en fait abaisser la tension artérielle, et réduire le risque d’accident vasculaire cérébral ainsi que complications cardiaques. Ensuite, notre plat de bols de pita est conforme au guide alimentaire Canadien 2019 puisque ¼ est dédié à une source de protéines saines: les poitrines de poulet. Les poitrines de poulet sont un bon

Appendix L – Nigel Uncorrected Writing Samples

Cyrano de Bergerac (sample paragraphs)

Dans sa pièce, Cyrano de Bergerac, l'auteur Edmond Rostand, développe ses personnages tout au long de la pièce, du début de la scène I jusqu'à la fin de l'acte V. Rostand réussit à démontré la personnalité, le caractère et les accomplissements de ses personnages de plusieurs façons différentes. Plus particulièrement, Rostand démontre les caractéristiques de son personnage principal Cyrano de Bergerac.

Un protagoniste, Le mousquetaire et le soldat astucieux des Cadets de Gascogne, Cyrano, est_aussi_amoureux de sa cousine Roxane. Mais, à cause de ses insécurités par rapport à son apparence physique, Cyrano ne partage jamais ses sentiments avec sa cousine. Il se pense laid à cause de son nez déformé. De plus, il est conscient que sa cousine est amoureuse d'un beau jeune homme au nom de Christian, qui sera envoyé en guerre avec les Cadets de Gascogne. Roxanne, ne connaissant pas les sentiments de Cyrano, lui demande de protéger ce dernier pendant la bataille.

Cyrano de Bergerac a une personnalité très inhabituelle et intéressante. Il a une forte confiance en lui même, qui est attesté quand son ami Lignière lui dit que 100 hommes veulent se battre contre lui. Cyrano ayant pleine confiance en soi marche avec assurance et les vainc tous. Ses actions sont fréquemment spontanées, il est ainsi avide de prendre des risques avec aucune peur de quoi que ce soit de ce qui peut mal tourner. Lors de la guerre, il a mis sa vie en danger plusieurs fois. Chaque matin il croisait les frontières ennemies juste pour aller livrer une lettre qu'il a écrite pour Roxane de la part de Christian. Il est également souvent impulsif et peut parfois agir de manière imprévisible, faisant des décisions sans se mêler trop des effets et des résultats de ses choix. Ceci est démontré au début lorsque Cyrano lance son sac d'argent sur l'estrade et quitte le théâtre.

Contrasting Themes in Lord of the Flies and The Crucible (sample paragraph)

….Both novels portray fear and manipulation, as well as the consequences of that fear and manipulation. In Lord of the Flies, a group of boys are left stranded on an deserted island after their plane was shot down and crashed. Upon settling on the island they turn to violence and savagery as they struggle to survive and govern themselves. In The Crucible, a group of individuals in Salem, Massachusetts, falsely accuse their neighbours of witchcraft as a means of deflecting blame and seeking revenge. In both novels, the characters are influenced by the opinions and actions of their peers, leading to disastrous consequences. In Lord of the Flies, the boys' fear of a supposed "beast" on the island leads to the formation of a violent tribe. The purpose of the tribe was to go search and hunt for the beast, in doing so they left Ralph and Piggy.