Bilingualism and students with ASD: A world with possibilities

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Today's Topics

- Autism and language development
- Myths about autism and bilingualism
- Bilingualism and education in the Atlantic Provinces
- Bilingualism in families from immigrant and refugee backgrounds
- French immersion
- Bilingualism in French-speaking families in Nova Scotia
- Bilingualism among First Nations families
- Augmented and alternative communication

Introduction: Autism and Language Development

What is Autism?

Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by difficulties in social communication and restricted and repetitive behavior.

What is Autism?

Autism spectrum disorder (ASD) is a **neurodevelopmental** condition characterized by difficulties in social communication and restricted and repetitive behavior.

Neurodevelopmental – growth and development of the brain and central nervous system

- often used when discussing brain functions that affect emotion, learning ability, self-control and memory.

APA, 2013

What is Autism?

Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by difficulties in **social communication** and restricted and repetitive behavior.

Social communication – verbal and nonverbal aspects of communication, such as:

- Using language for social purposes
- Appropriately matching communication to the social context
- Adjusting language to match the needs of a communicative partner
- Following social rules for communication
- Understanding nonliteral language
- Integrating language with nonverbal communication

APA, 2013

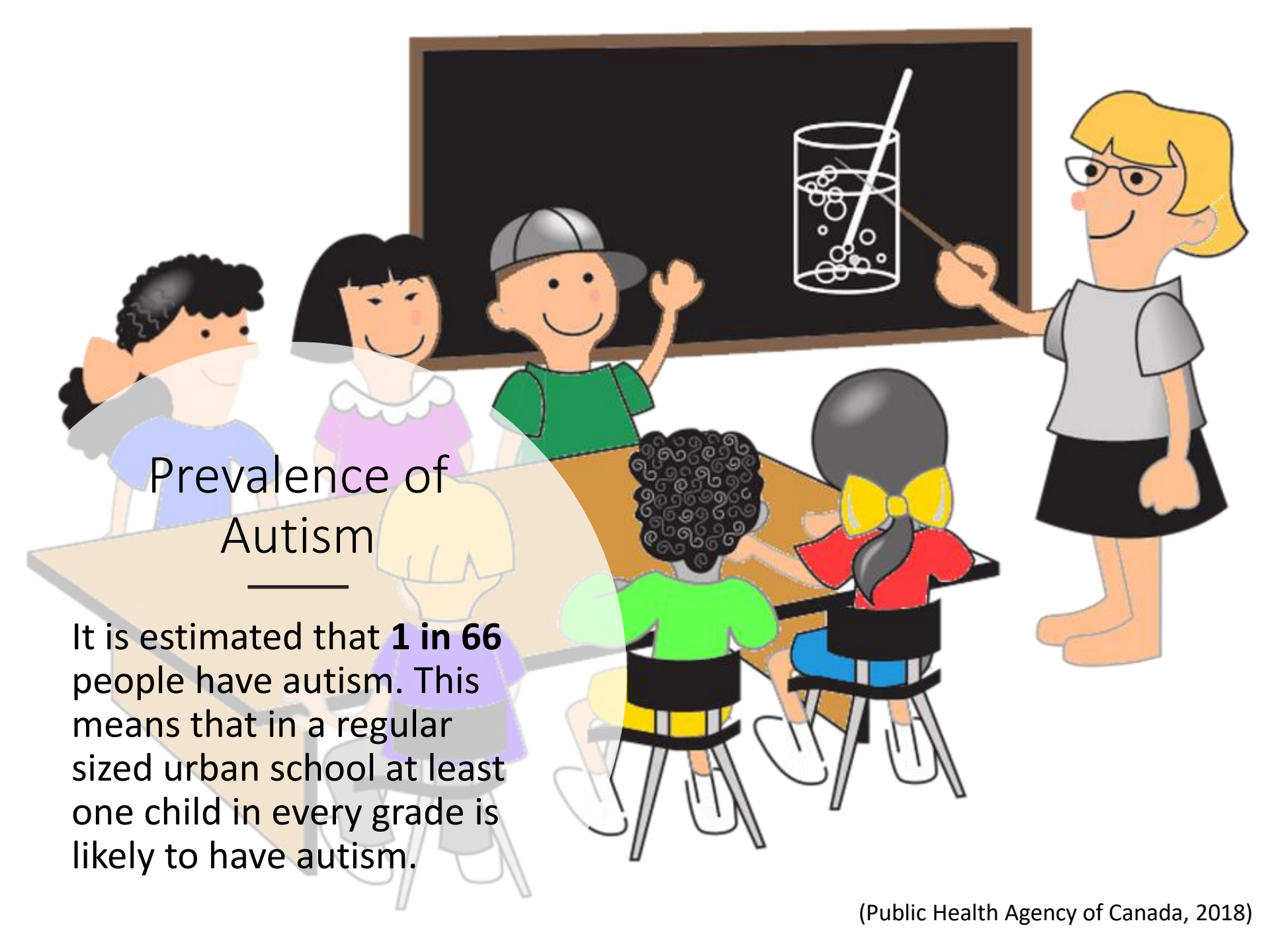
What is Autism?

Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by difficulties in social communication and **restricted and repetitive behavior**.

Restricted and repetitive behavior – a broad category of behaviors, including:

- Narrow interests (preoccupation)
- Adherence to non-functional routines
- Repetitive motor movements

(APA, 2013; Kim & Lord, 2010)



Prevalence of Autism

It is estimated that **1 in 66** people have autism. This means that in a regular sized urban school at least one child in every grade is likely to have autism.

(Public Health Agency of Canada, 2018)

Autism and Language Development

- In the areas of vocabulary and sentences, children with autism present with a wide range of language skills, ranging from precocious language abilities to minimally verbal.

- Approximately 30% of children with autism are minimally verbal.
  - Minimally verbal – by age 5, a child with less than 20 words in their expressive vocabulary
  - In typical language development, children are estimated to have 2100 words in their expressive vocabularies.

- Language development is a noted area of challenge for many, but not all, children with autism.

- Pragmatic (social communication) is an area of challenge for all children with autism.

Loraine (2008); Tager-Flusberg & Kasari (2013)

Autism and Bilingual Development

- Because language learning is often a noted area of challenge for children with autism, many fear that bilingualism may present too much additional burden for children with autism.

- Research suggests that this fear is unfounded.

- In detailing available evidence, today's webinar will dispel commonly held myths about bilingualism in children with autism.

Myths:
Autism and Bilingualism

Autism and Bilingual Development

Myth or Reality?

Two languages will be too confusing for children with autism.

Myth.

The brain does not get confused. Children, including children with autism, can separate their two languages early in development.

Autism and Bilingual Development

Myth or Reality?

Learning two languages takes twice as much time and effort.

Myth.

Knowing one language can help us learn another.

Both the quantity and quality of interactions affects how well we learn each language.

Autism and Bilingual Development

Myth or Reality?

Keep it simple. Children with autism should learn only one language.

Myth.

If important people in the child's life speak more than one language, exposure to only one language isolates the child.

Autism and Bilingual Development

Myth or Reality?

Children with autism cannot become bilingual.

Myth.

Children with autism ***can*** and ***do*** become bilingual.

Autism and Bilingual Development

Myth or Reality?

It's ok to assess and treat bilinguals with autism in one language.

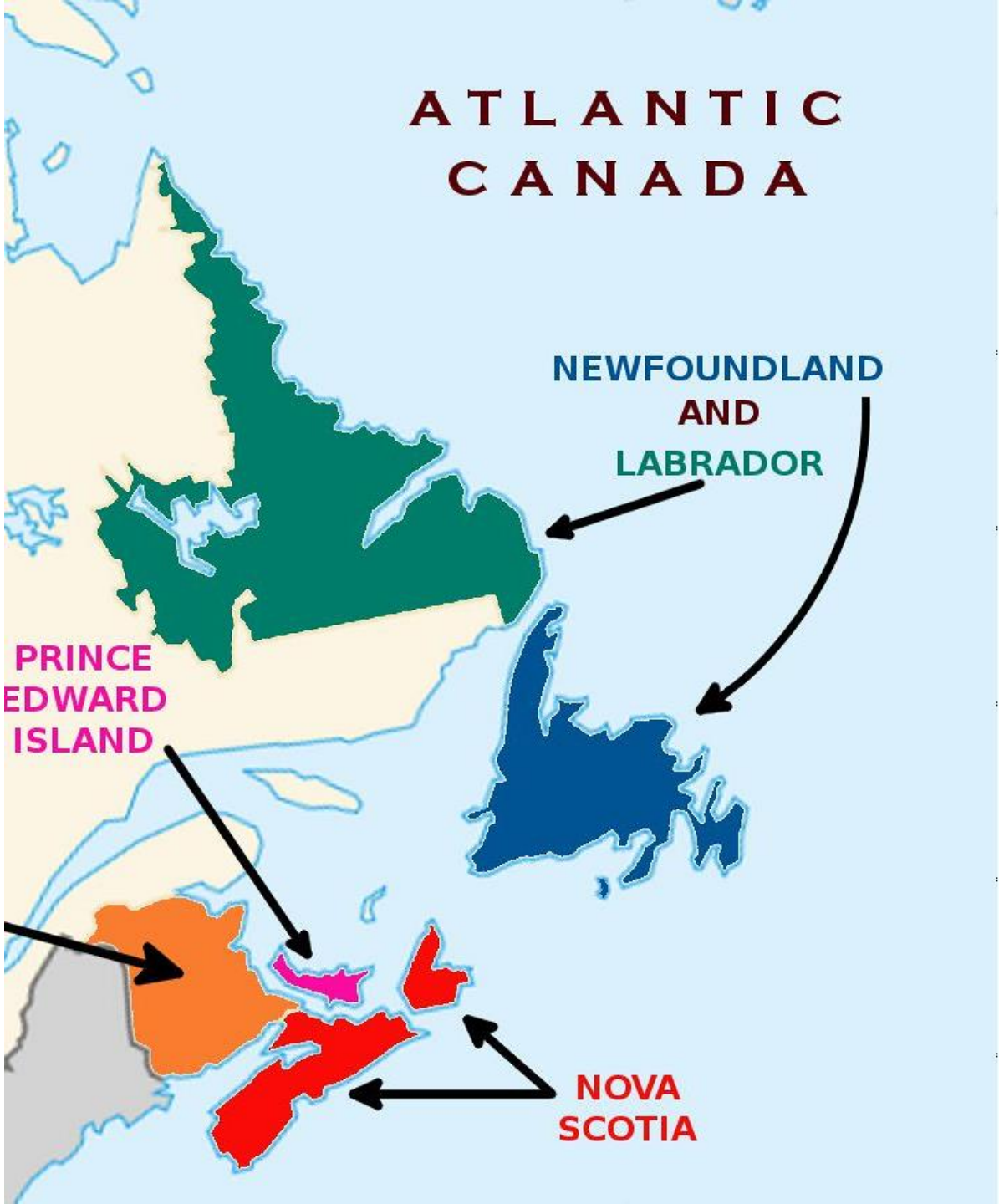
Myth.

Bilingual children with autism need ***both*** their languages assessed and supported.

Introduction: Bilingualism and Education in Atlantic Canada

Bilingualism in Atlantic Canada

- 274,160 people have French as a mother tongue
- 90,835 have a non-official language as a mother tongue
- 7,175 people report not knowing either English or French



Students in Atlantic Canada

- English-speaking children enrolled in English language schools
- Francophone children enrolled in French language schools
- Non-Francophone children enrolled in French immersion
- First Nations children enrolled in either the French or English school boards
- Children from immigrant and refugee backgrounds who are English and/or French language learners enrolled in either the French or English school boards
  - What about French Immersion for these students?

Should children with autism enroll in bilingual education?

Research:
Autism and Bilingualism

Case studies

Special thanks to Emma Bornheimer and Kathryn Carreau for lending their time and voices to these case studies.

- Today, we will review 4 **fictitious** case studies
- The descriptions in these case studies do not represent actual children.
- The details in these case studies do not reflect actual services provided in these towns or of the experiences of any one family.
- These fictitious case studies are meant to reflect relatable examples of possible situations and the common concerns that you may encounter when interacting with bilingual families who have a child with ASD.
- The research presented following each case study will showcase relevant findings that pertain to issues raised with that case study.

Case Study 1

Questions Raised from Case Study 1

- Why is home language/first language/minority language development important to this family?
  - Home language – the language used by the child and their family members
  - First language – the language the child learned first
  - Minority language – a language spoken by a minority of people within a region (often has little, if any, institutionalized support)
- Should we be worried about home language development for this child?
- Is being exposed to two languages beneficial for her?

Majority-language shift in the bilingual households of children with ASD: A cautionary tale for sustained bilingualism

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The Pathways in ASD Team

Research Questions

- Do families who speak a minority language at the time of an autism diagnosis continue to speak the minority language with their child?
- What is the impact of minority language exposure on the emerging majority language abilities of children with ASD?

Participants

pathways
in autism spectrum disorder

- Drawn from the Pathways in ASD longitudinal sample (n = 421)
  - 5 centers coast-to-coast (Canada)
- 109 children who received an ASD diagnosis before the age of 4;0
  - 70 monolingual English speaking children (no other language reported in the home)
  - 39 children who were receiving minority-language exposure at home at the time of diagnosis
    - 21 whose families maintain minority-language exposure
    - 18 whose families drop minority-language exposure

Participant Characteristics

	Monolingually exposed (SD) (n = 70)	Minority-language exposed (SD) (n = 39)	Statistical Analysis: Welch Two Sample t-test / Chi-Square
Age at Diagnosis	2;11 (6.3 months)	2;10 (5.8 months)	$t(84.43) = 0.57$, $p = 0.57$
Restricted and Repetitive Behavior (ADOS)	8.13 (1.61)	7.77 (1.95)	$t(67.60) = 0.98$, $p = 0.33$
Social Communication (ADOS)	7.66 (1.75)	7.05 (1.76)	$t(78.87) = 1.73$, $p = 0.09$
Nonverbal IQ (M-P-R)	57.18 (23.36)	49.00 (22.16)	$t(75.07) = 1.75$, $p = 0.08$
Language Level at Diagnosis (ADOS and ADI)	29% minimally verbal	51% minimally verbal	χ^2 (1) = 4.17, $p = 0.04$
Education Level of Primary Caregiver	3.01 (1.05)	3.13 (0.99)	$t(80.32) = -0.57$, $p = 0.57$

Note: Education level of primary caregiver: 1 = Some high school to completed high school; 2 = some trade, technical or vocational school; 3 = Some university or diploma or certification completed; 4 = bachelor degree or above

Do families who speak a minority language at the time of an autism diagnosis continue to speak the minority language with their child?

- 39 children who were receiving minority language exposure at home at the time of diagnosis

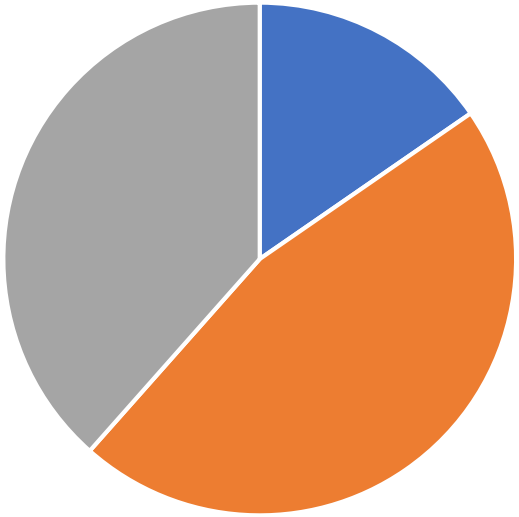
- Minority language exposure (based on parental report) classified as:
  - Maintained – Minority Language use was reported at all three time points.
    - Primary or secondary language in the household
  - Dropped – Family reported no longer using the minority language

Minority Language Input Over Time

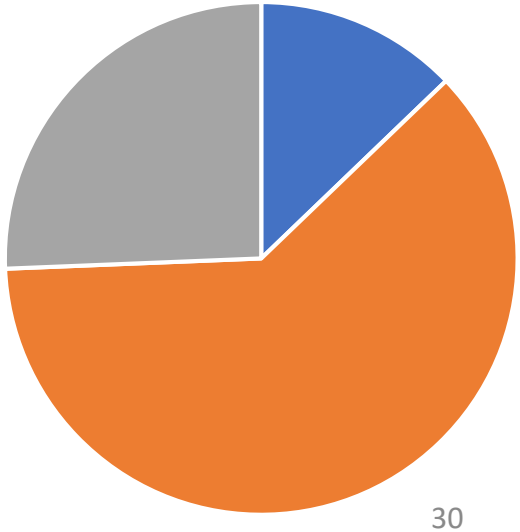
T1 (at diagnosis)

- Minority as primary
- Minority as secondary
- Minority Dropped

T2 (two years later)



T3 (age 6)



Risk of losing the home language?

- Minority-language loss is a concern for children who have typical development and are from immigrant and refugee backgrounds
- The risk of minority-language loss for children with ASD seems high from these data
  - Limited input within the home, even when minority language is maintained.
  - Cautiously optimistic about reintroduction of minority language
- Concern: pressure to provide monolingual input and interventions only in the majority language (English) make the minority language even more vulnerable for children with ASD?

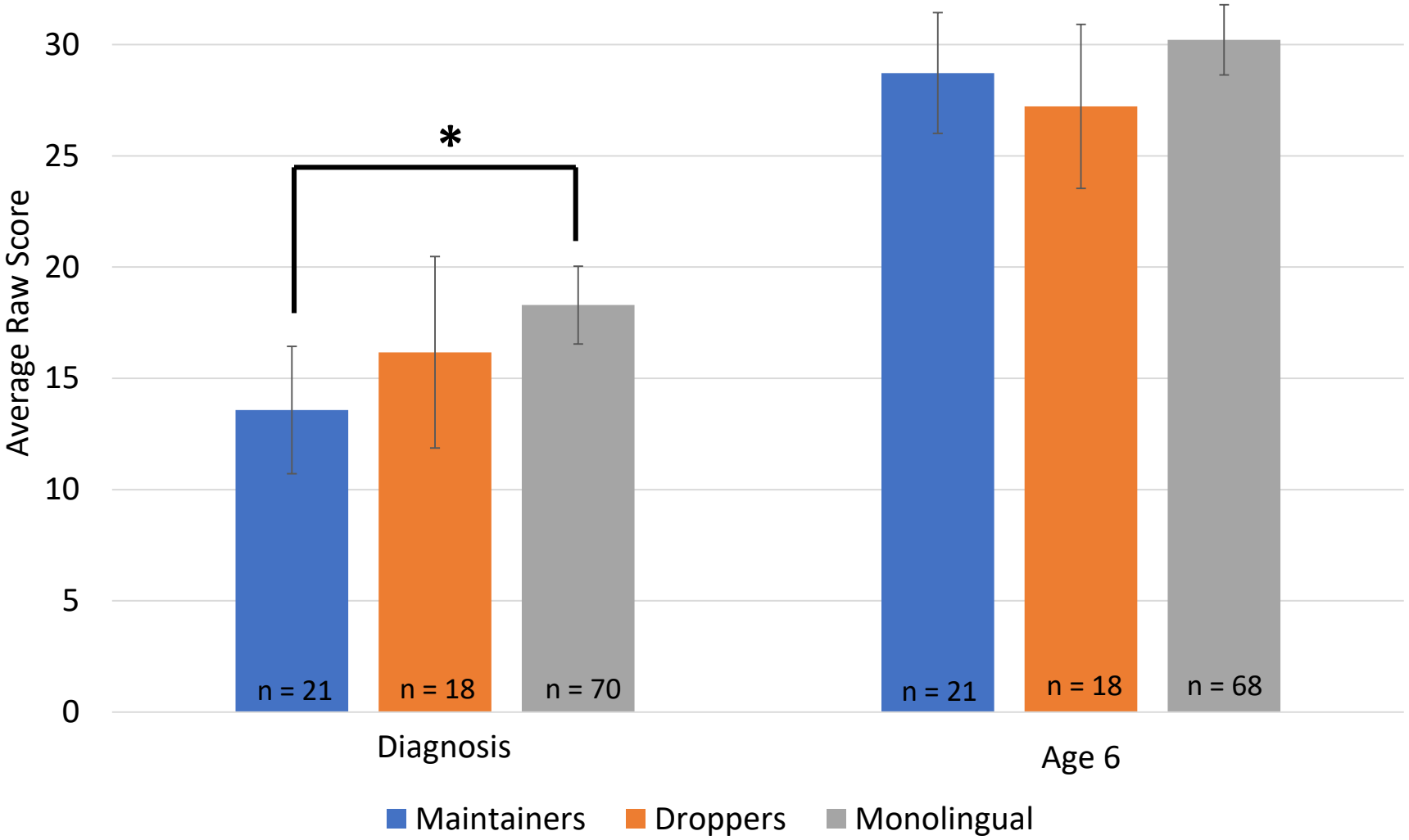
(e.g., Bridges & Hoff, 2014 Li & Duff, 2008; Montrul, 2015; Valdés, 2005)

What is the impact of minority language exposure on the emerging majority language abilities of children with ASD?

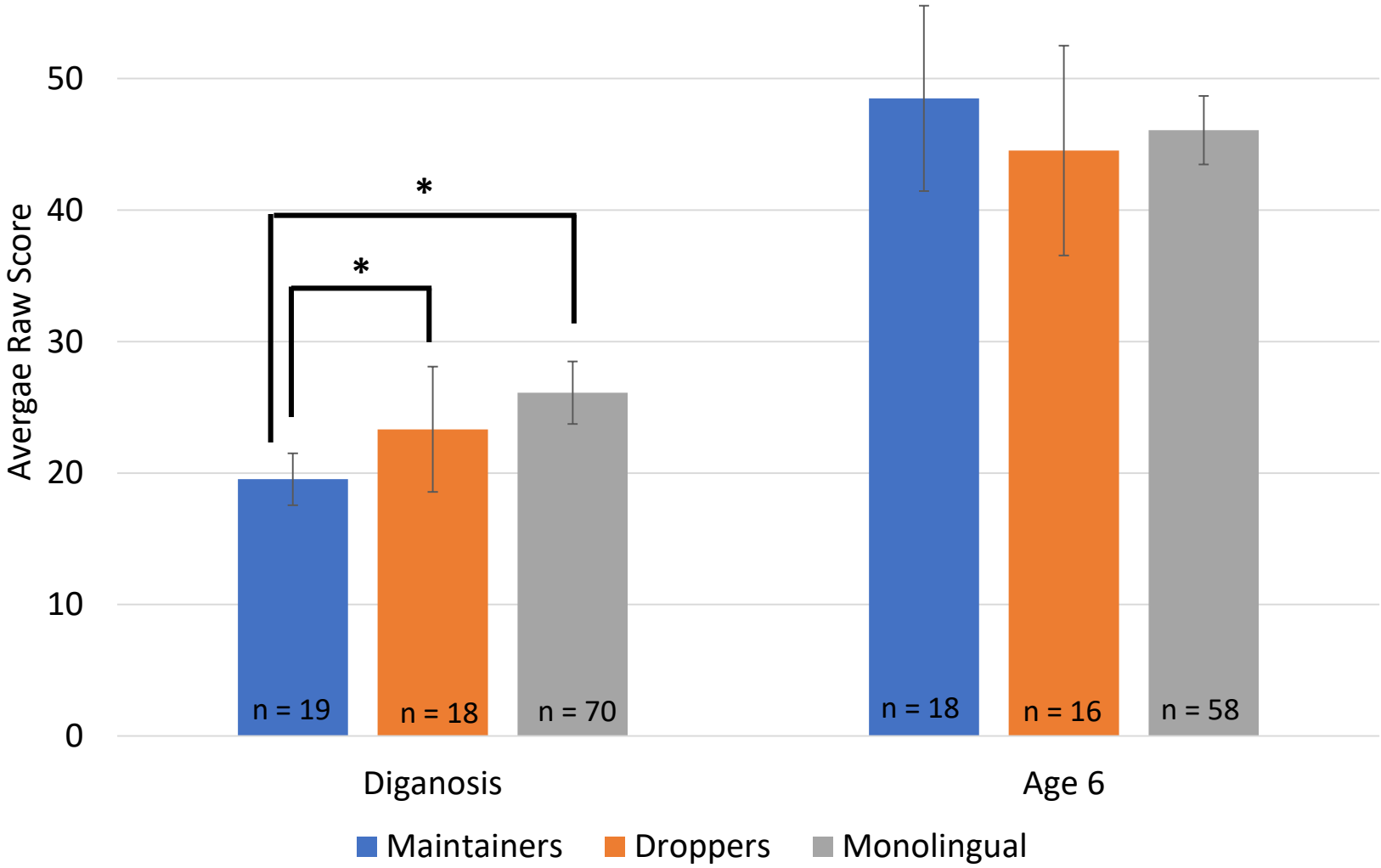
- 3 groups:
  - Maintainers: Continued to receive minority language input at home (n = 21)
  - Droppers: Minority language exposure was discontinued at home (n = 18)
  - Monolingually exposed children (n =70)

- Language abilities at baseline (T1) and age 6 (T3)
  - Vineland Adaptive Behavior Scales (VABS-II): expressive and receptive scores
  - Preschool Language Scales (PLS-4): auditory comprehension and expressive language scores

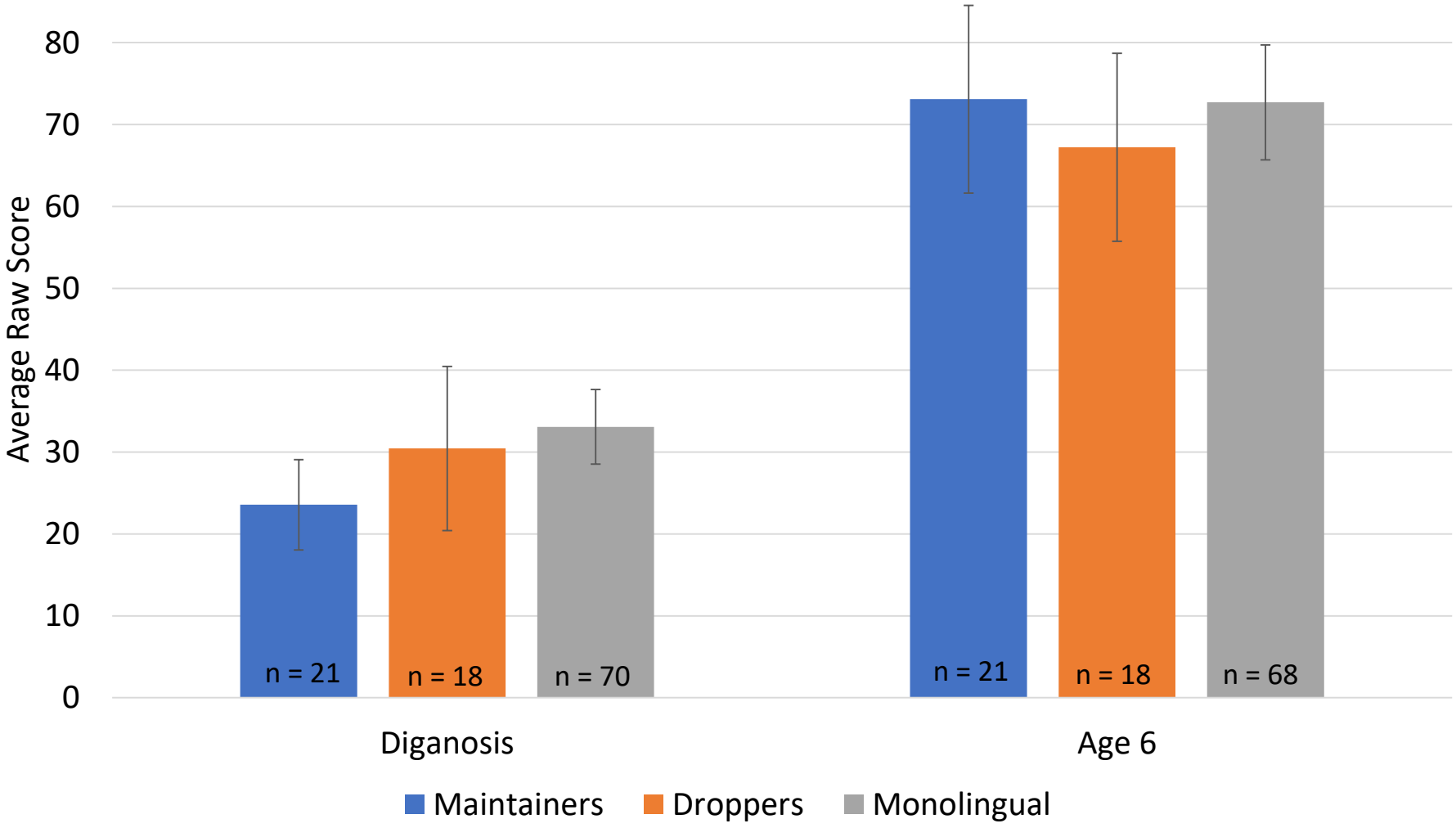
Receptive Language (Vineland Adaptive Behavior Scale)



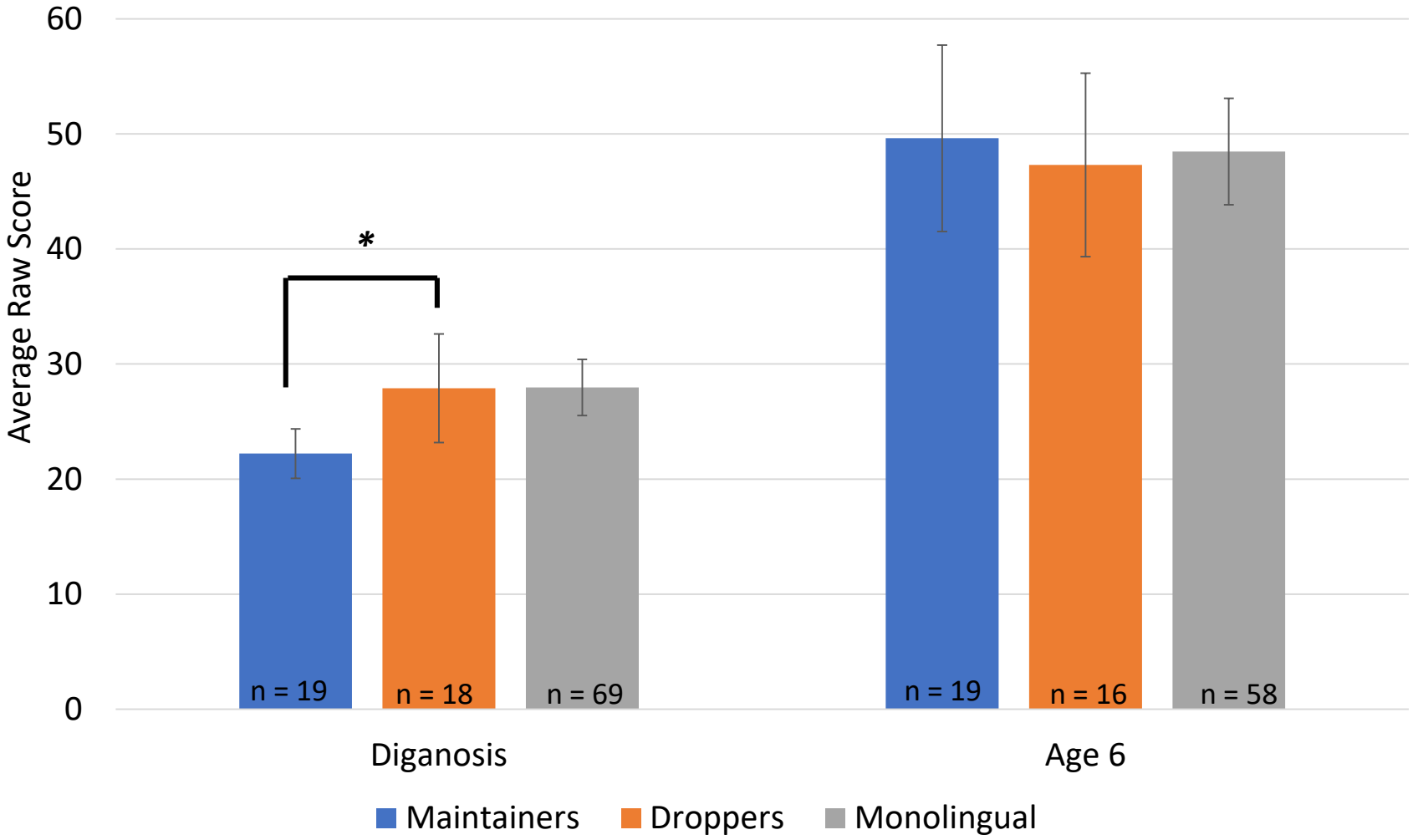
Auditory Comprehension (Preschool Language Scales)



Expressive Language (Vineland Adaptive Behavior Scale)



Expressive Language (Preschool Language Scales)



Key Points

- Declining minority-language input at home raises concerns for continued bilingualism for these children

- Children with ASD have the capacity for bilingualism/L2 acquisition
  - Continued L1 minority language exposure has **no** negative consequences for majority language development
  - Maintainers = Droppers (**and monolinguals)** by age 6
  - Aligns with previous research into bilingualism and ASD

(Drysdale, 2015; Ohashi et al ., 2012; Raining-Bird et al., 2012; Lim et al., 2018; Paradis et al. 2018)

Why does it matter?

- If English skills are the same across all learning situations (monolinguals, droppers, maintainers), why does it matter if families are supported in bilingualism?
- Continued minority language development may be beneficial for these children in their social relationships with family and ultimately their well-being.
- In typical development, children learn a second language more quickly when they have a strong first language foundation. In the long run, strong first language skills may also help these children advance in English.

Case Study 2

Questions Raised from Case Study 2

- Why is French immersion important to this family?
- Is French immersion realistic for this child?
- Should the family choose to move their son to the English program?

French Immersion outcomes for children with SEN

SEN – Special Education Needs, including, but not limited to, children with autism

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DALHOUSIE UNIVERSITY

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UNIVERSITY OF TORONTO
OISE: 50 YEARS OF IMPACT

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

Purpose

To study the outcomes of children with SEN in EFI in one Ontario school board.

Research questions

- How do children with a variety of Special Education Needs (SEN) perform in English Language of Instruction (ELoI) and Early French Immersion (EFI) programs?
- Do children with SEN in ELoI and EFI programs differ on English language and academic achievement measures?

Acronyms

Special Education Needs (SEN)

English Language of Instruction (ELoI)

Early French Immersion (EFI)

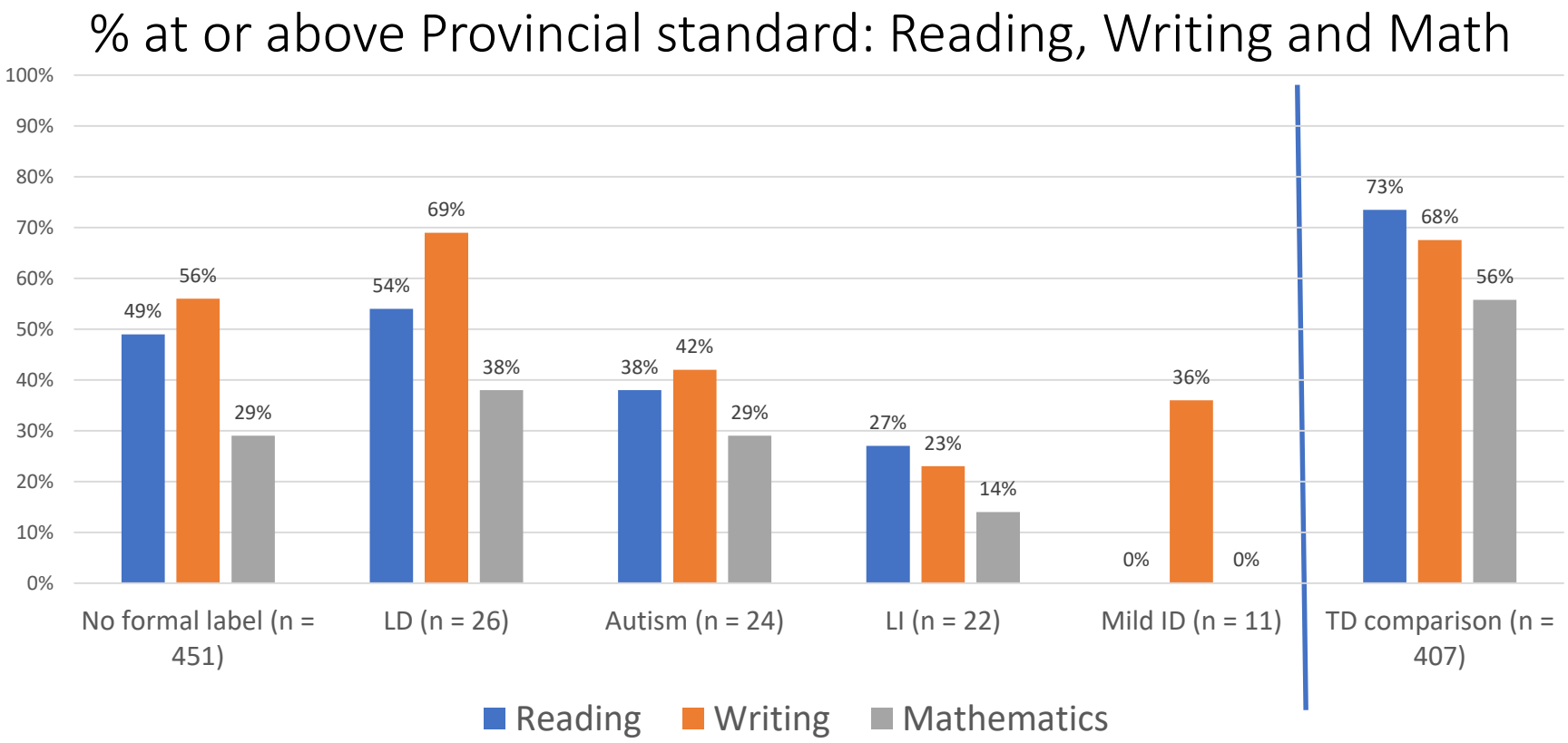
Study Design

English Academic Achievement, Province-wide test data, grade 3

Participants

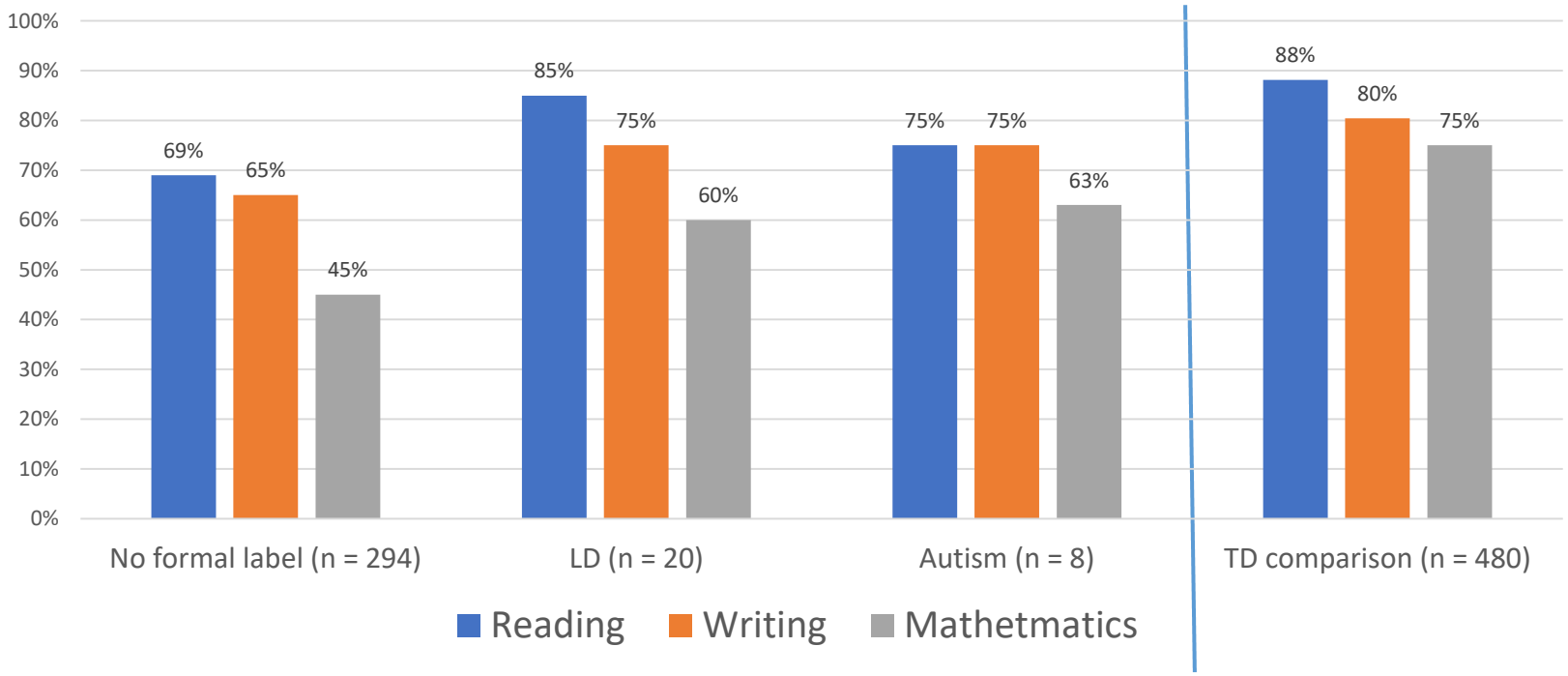
- Data provided by the partner school board
- 1766 3rd grade students
  - EFI or ELoI since Kindergarten
  - ELoI: 47 or 8.6% in Alternate Program or Special Education Programs
- 887 TD children from 2018
  - randomly selected
  - balanced for gender, SES, Home Language (English/Other)
- 869 children with IEPs (SEN) from 2016 , 2017, 2018
  - With an exceptionality label
  - No formal label, although they had completed the Identification, Placement, and Review Committee (IPRC) process and receiving special education services

English Language-of-Instruction



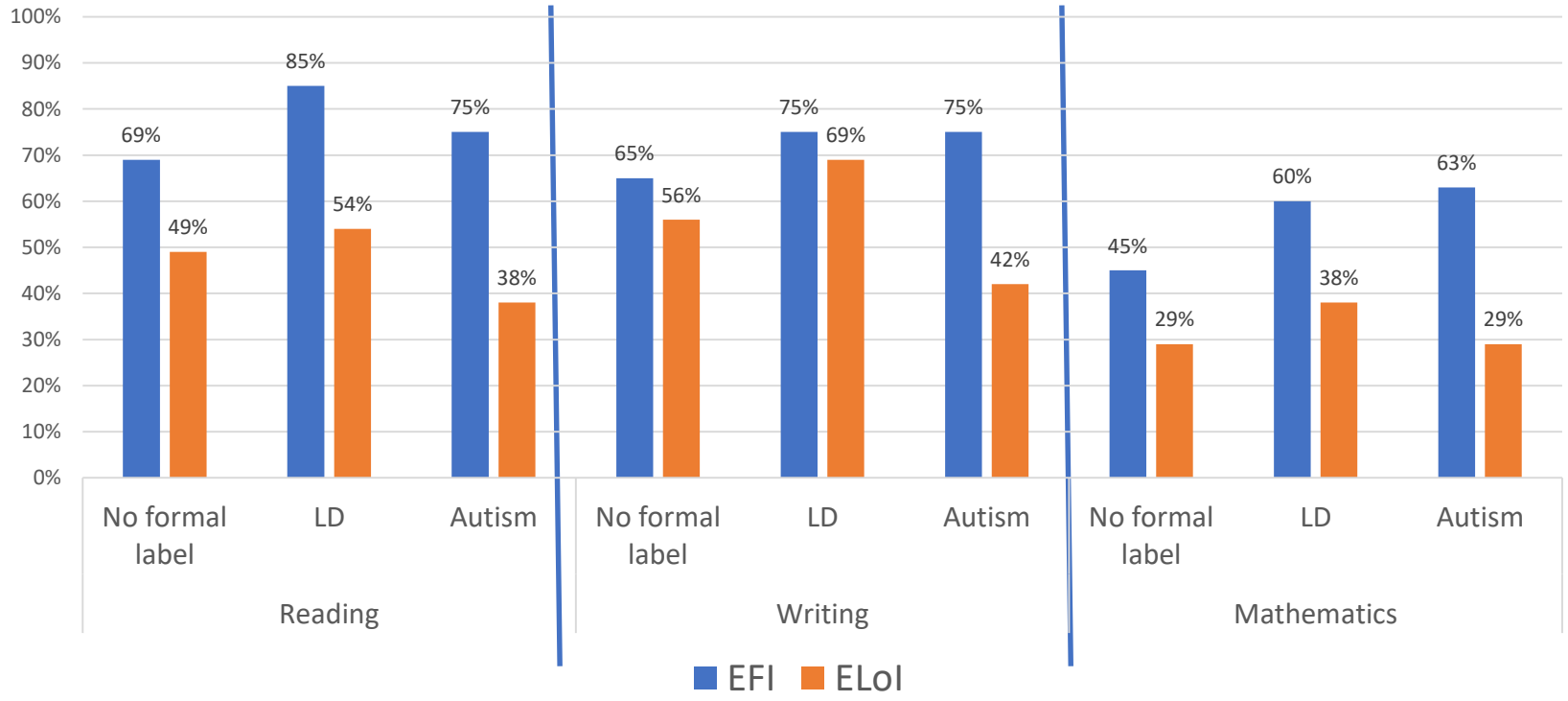
Early French Immersion

% at or above Provincial standard: Reading, Writing and Math



EFI & ELoI

% at or above Provincial Standard, Reading, Writing, and Math



Summary

- Composition of groups different
  - ELoI: 8.6% in Alternate or Special Education programs
  - ELoI: more from low SES neighbourhoods
  - ELoI: more SEN & more exceptionality categories represented
- Achievement in EFI and ELoI different
  - EFI: Higher % of children in all comparable exceptionality groups meet Provincial Standard in all domains
  - EFI: Majority of children with SEN meet Provincial Standard, regardless of exceptionality group or test domain
  - ELoI: Majority of children with SEN in do not meet Provincial Standard, except reading and writing in children with No Formal Label or LD
  - EloI, lowest performance in LI, Autism, & Mild ID
- Achievement generally lower in Math than Reading and Writing

Key points

- Children in EFI in both studies were generally doing very well
  - Oral language
  - Reading
  - Academic achievement
- No evidence to suggest that they should be excluded from EFI
- Children with SEN do not participate in EFI to the same extent as in ELoI
  - Severity of SEN also influences placement
- Tendency to avoid labeling makes it difficult to study EFI outcomes in subpopulations of children with SEN
- Further research warranted
  - Matched groups
  - Specific exceptionalities
  - Investigate individual differences
    - Link more detailed SEN information to individual Provincial test data
  - Longitudinal comparisons

Inclusion in French Immersion

Mady & Arnett (2009)
Wise (2018)

- Students with special education needs rarely have access to the same range of educational programs that are available in regular English programs.

"Teachers are now strongly encouraged to use research-based practices to teach students with special needs … Since there is scant research on the topic, the EFI teachers may feel they lack sufficient knowledge to be inclusive educators because of this conflict between the mandates and the research reality."

~ Mady & Arnett, 2009, p. 46

- To ensure, inclusive educational policies we need to establish best practices for supporting students with special educational needs within French immersion programs.

Case Study 3

Questions Raised from Case Study 3

- Why is continued French language support important for this family?
- What are the services available to French-speaking families?
- Does this family need to move their child into an English-speaking program to ensure he gets the services he needs?

Service needs for French-speaking families of children diagnosed with or suspected of having ASD in Nova Scotia

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“Whereas bilingualism seems not to have a negative impact on the development of communication in children with ASD, the consequences of shifting to a monolingual code might have negative effects on both the parents’ maintenance of their cultural heritage and their emotional relationship with their children.”

Purpose

Identify the service needs of francophone families

Study Design

- Survey French-speaking families about:
  - Their needs for specialized services
  - The importance of each service
  - The language in which they had received services
- Follow-up interviews with respondants

Participants

- 22 parents and one grandmother of children with autism
- Income: below $15,000-above $70,000
- Education level of primary caregiver: completed high school – master's degree
- 22/23 caregivers spoke French with their children

Preference for French language services

However, parents reported difficulty finding francophone professionals especially during the first steps of their pathway (i.e., assessment and diagnostic process). For example:

- One family was obliged to be referred to an anglophone psychologist in order to receive a diagnosis
- Another family reported having their child undergo EIBI in English while she was enrolled in French school.

Recommendations

- French-speaking families have special needs, especially when there is a lack of proficiency in English;
- Existing autism services should be reinforced, especially in the mental health care and community fields, which appear to be quite neglected areas;
- More French or bilingual autism services should be available not only in the educational / specialized educational field but also in other areas in order to facilitate the access of French-speaking families;
- The French school system acts as a focal point for francophone families but more connections between services offered through it and services accessed outside would help families to feel more supported;
- The development of early assessment and diagnostic services in French would help families to better cope with the diagnosis and to better understand the situation;
- Adaptation skills are required for both parents and professionals in order to cope with the weaknesses of services and to adapt interventions to individual needs;
- More connections at community level through support services and socialization initiatives would help French-speaking families to feel less isolated.

Stay tuned for updated results from a new project focusing on children's transition to school.

Case Study 4

Questions Raised from Case Study 4

- Why is the Mi'kmaq language important to this family?

- Children from Eskasoni have access to Mi'kmaq immersion programs. How are children with autism supported in these programs? What bilingual education programs are available in other regions?

- Is it possible to adapt alternative or augmented communications for multilingual and multicultural contexts?

We all have an obligation to support First Nations, Metis and Inuit (FNMI) languages

- In Canada, there are three groups of indigenous people: First Nations, Metis and Inuit (FNMI)
- The *Truth and Reconciliation Commission* emphasized the need to support FNMI languages as a key aspect of Reconciliation
- Research specifically about language development of children with autism who are FNMI is severely lacking

Alternative and augmented communication (AAC) is not just for monolinguals, but AAC programs have not always been designed or implemented with bilinguals in mind.

"In a number of studies with culturally and linguistically diverse families, parents and other family members expressed **appreciation for the use of AAC at school** and recognized that the AAC system was critical to their child's social and academic participation, yet they did not convey any desire or need to use it at home."

Soto & Yu (2014, p. 87)

Alternative and augmented communication (AAC) is not just for monolinguals, but they have not always been designed or implemented with bilinguals in mind.

"When asked to identify the reasons, parents mentioned a series of **barriers to successful implementation of AAC** strategies and techniques in the home, including:

a) language intervention conducted only in the school language;
b) language and cultural barriers between parents and professionals;
c) communicative limitations of the AAC device;
d) irrelevant vocabulary;
e) culturally inappropriate symbols and messages;
f) lack of culturally and linguistically accessible, family-centered instruction on how to use the device at home"

Soto & Yu (2014, p. 87)

Alternative and augmented communication (AAC) is not just for monolinguals, but they have not always been designed or implemented with bilinguals in mind.

"In creating a bilingual AAC system, it is not enough to simply translate the same vocabulary into a different language; a truly bilingual AAC system would reflect the way children learn and use each language in different communities"

Soto & Yu (2014, p. 889)

Conclusion:
Bilingualism is possible for children with autism

To date, the main question addressed by researchers has been:

Can children with autism be bilingual?

YES!

- Bilingualism is not only **possible** for children with autism, but in certain circumstances, it may be **beneficial**.
- Social benefits[a]
  - Maintained connection to family and culture
  - Identity
  - Sense of belonging
- Cognitive benefits[b]
  - Some emerging evidence suggests improved executive function among bilingual children
    - Note: This research is still in the early days and it is unclear if this extends beyond the experimental context.
- Educational and occupational opportunities
  - In an increasingly multilingual world, bilingualism is an advantage.
  - Adults with autism are often unemployed or underemployed.
- We still need more research with children of more varied ages.

Drysdale et al. (2015)[a]; Gonzalez-Barrero & Nadig (2019)[b]; Hambly & Fombonne, 2012; Kay-Raining Bird et al (2012); Lim et al. (2018)[a]; Ohashi et al. (2012); Paradis, et al. (2018); Sorenson Duncan et al. (2019); Sutton et al. (2019); Tannenbaum (2005)[a]; Wharton et al., (2000)[a] ; Yu (2016)[a];

It is time to move the conversation forward to:

How do we best support bilingualism in children with autism?

- Research is limited about the best practices for bilingual education and intervention for children with autism.
- In many cases, the best practices for interacting with bilingual families generally are relevant in the context of autism as well, including:
  - If you can, talk to the child and the family in the language they speak at home.
  - Even if you don't speak that language, help the family create meaningful opportunities to use the home language with their child. For example:
    - Encourage the parents to use the home language
    - Explicitly tell them you support bilingualism for their family
    - Demonstrate how to use books to create situations for introducing new vocabulary items and language opportunities. The pictures in English books can do this too
    - Encourage signing songs, telling stories, and playing in the home language
  - Take time to learn about who they are and what language and cultural practices are important to them.

Paradis, Kirova & Dachyshyn (2009)

Tips for supporting bilingualism in the classroom

- Do you work in a French language school board?
  - If yes, are there ways to help the families find French language services for their child with autism?
  - French, although an official language federally (and provincially in New Brunswick), is a minority language in Atlantic Canada. This means that without support for French, children are at risk of losing their French language abilities in favor of English.
- Do you work in an English language school board?
  - If yes, show your students and their parents that you value their languages and cultures. Tell families that you encourage bilingual exposure.
  - Bring a little of the home language into the classroom, even if it is by learning a greeting in the language. This may help the child feel that their language has value and purpose outside of the home. Small gestures can go a long way.
- Do you work in French immersion?
  - If yes, remember your whole classroom is set up around teaching a second language.
  - Remember that children with autism may learn a second language at a different rate as other students in the class. A look at their level of English skills should help gauge what you can expect in French.
- In all cases, remember that bilingualism may not enhance language learning difficulties, but it will not alleviate them either.
  - This means that if you see a child struggling to learn two languages, they probably will struggle to learn just one language as well.
  - Taking away one of the languages is unlikely to help them learn language, but this solution is very likely to have other unintended negative consequences.

Where do we go from here?

- We need research collaborations between educators, health care professionals and researchers to:
  - Better document the challenges that educators and health care professionals face in supporting bilingualism in children with autism.
  - Determine solutions to these challenges.
  - Identify efficient and effective methods to best support bilingual families who have a child with autism.
  - Establish the long-term language development of bilingual children with autism.
- Together, we can create a more inclusive and welcoming environment for all families with children with autism, regardless of what language(s) they speak at home.
- Together, we can support children with autism in reaching their full potential, including bilingualism and all of the possibilities that bilingualism affords.

Thank you!

To keep the conversation going, feel free to contact us:

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Full citations and reference list available on request