Language and literacy skills of English Language Learners in middle school (grades 7-9): How do they compare to their monolingual peers?

Authors
Johanne Paradis[1], Stefka Marinova-Todd[2], Adriana Soto-Corominas[1], Xuan Zhang[2], Brian Rusk[1], and Kayla Day[1]

[1] University of Alberta
[2] University of British Columbia

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UNIVERSITY OF ALBERTA
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EXECUTIVE SUMMARY

Language and literacy skills in English are essential for academic success for English Language Learners (ELLs; Murphy, 2018). Very little research exists on second language oral and literacy skills of ELLs in middle school, but a 2016 report for Edmonton Public Schools (Edmonton Public Schools, 2016) suggests that ELLs fall behind in middle school in literacy skills. In Vancouver, official policy guidelines regarding ELLs highlight "the fact that students may have differing levels of proficiency in relation to different areas of language (e.g., they may have more advanced oral language proficiency than written language proficiency)" (BC Ministry of Education, 2018, p. 9).

The research in this report was conducted in Edmonton and Vancouver during the 2017-2018 academic year. No differences in results emerged between the two cities and so data are combined in this report. The oral language and literacy skills of 227 students - ELLs and their monolingual classmates in grades 7-9 - were examined and compared. The objectives were 1) to assess the extent of differences between ELL and monolingual students, 2) to examine the relationship between oral language and reading skills, and 3) to determine the sources of individual differences in ELLs' performance to better understand the pathways to success and what could signal which ELLs could be at risk of falling behind.

We defined ELL students as those who heard and/or used another language at home. Thus, our definition included students who completed all their schooling in Canada and might no longer be classified as "ELL" in the school system. This permitted us to determine whether such ELLs had "caught up" to their monolingual peers by middle school. Oral language tests measured vocabulary breadth and depth and grammatical knowledge. Literacy was measured through a standardized reading comprehension test. Background information about students' language and literacy activities outside the classroom and parental education levels was obtained through a detailed questionnaire.

Key Findings

- Many ELLs showed lower performance on oral language and literacy tests than their monolingual classmates even after several years of schooling in English in Canada.
- ELLs who arrived in Canada in later childhood/adolescence showed lower performance than ELLs who had been in Canadian schools for at least seven years. The majority of the late arrivals performed below age expectations.
- ELLs' oral language skills strongly predicted reading comprehension outcomes.
- ELLs who frequently engaged in reading activities outside the classroom showed stronger reading scores. Frequent engagement in listening activities like TV shows, movies or music, had a negative effect on reading scores.

Key Implications and Recommendations

- Many ELL students in middle and early high-school might be at risk for lower academic performance due to insufficient language and literacy skills. There should be adequate ESL support for ELLs in middle school, even those that have been in the Canadian school system for extended periods of time.
- Support for ELLs should focus on both oral language and literacy. Just promoting reading might not be effective in providing adequate ESL support.
- ELLs should be encouraged to engage in text-based activities over listening activities in their leisure time.

INTRODUCTION

Motivation for this study

Canadian schools are welcoming an increasing number of culturally- and linguistically-diverse students and, consequently, must adapt their educational programming to support these students. In Vancouver and Edmonton, 25-35% of K-12 students are English Language Learners (ELLs; see full definition below).

Developing appropriate levels of oral language and literacy skills is crucial for accessing the curriculum and for academic achievement. Based on some early work by Jim Cummins at the Ontario Institute for Studies in Education (OISE), it is commonly believed that after 7 years, ELLs have caught up with their monolingual peers in terms of English academic language skills. This belief is problematic for two reasons: 1) Very little research has ever examined ELLs' English skills beyond elementary school and existing research shows mixed support for a 7-year timeline. 2) There is no systematic research looking at the English skills of ELL students who arrive in the host country in middle childhood or adolescence.

The primary objective of this research was to examine ELLs' oral language and literacy skills in middle school (grades 7-9) compared to their monolingual classmates in order to assesses the validity of a 7-year timeline for catching up.

The secondary objectives of this research were to determine the relationship between oral language skills and reading and the sources of individual differences in ELLs' performance to better understand the pathways to success and what could signal which ELLs could be at risk of falling behind.

Who are ELLs?

We adopted a broad definition of English Language Learners (ELLs) for this research. ELLs were defined as students who hear or speak a language other than English at home (their *first* or *heritage language*) and come from first- or second-generation immigrant and refugee backgrounds. This definition applies to students who have had all their education (7 years or more) in Canada. It also applies to students who are recent arrivals.

The definition of *ELL* in this research differs from the one used by many school boards where the classification of students as "ELL" is often based on evaluation of proficiencies and/or the number of years in the school system. Effectively, our definition includes all students classified as ELLs plus those who are no longer classified as such. This enabled us to ascertain whether ELL students with 7 years of schooling in English were indistinguishable from their monolingual peers in middle school or not.

FYI

A key motivator for this research was the Strategic Plan Update from the Edmonton Public School Board, Priority 1: Success for Every Student – Literacy, which found some ELL students to be falling behind in middle school (Edmonton Public Schools, 2016).

METHOD

Students were visited in their schools and completed a variety of tests. Some tests were administered in the classroom and some were done individually in a quiet space. Students completed an interview in which they reported what language they use with family and friends, and how often they engage in different activities in each language. Students' parents completed a questionnaire that asked about parental education.

Graphic 1. Participating schools in Edmonton and Vancouver

Edmonton			Vancouver
Aurora	Rosslyn	T.D. Baker	David Thompson
Balwin	Stratford	Westlawn	Magee
Kate Chegwin			University Hill

Instruments: Language and literacy tests

Vocabulary size

- Test: Peabody Picture Vocabulary Task (Dunn & Dunn, 2007)
- Procedure: Select the picture that matches the word spoken by the examiner

Word meanings

- Test: CELF – Word Classes Receptive (Semel, Wiig, & Secord, 2003)
- Procedure: Choose two words out of four that are related in meaning

Grammar

- Test: Grammaticality Judgment Task
- Procedure: Listen to a sentence and say whether it is *correct* or *incorrect* by pressing a key on the keyboard

Reading comprehension

- Test: Gates MacGintie (MacGintie et al., 2007)
- Procedure: Read increasingly complex texts and answer comprehension questions

Instruments: Non-verbal IQ and verbal memory tests

Non-verbal IQ

- Test: Kaufman Brief Intelligence Test – Matrices (Kaufman & Kaufman, 2004)
- Procedure: Select the picture that best completes a series of related pictures or matrix.

Verbal memory

- Test: CTOPP – Non-word repetition (Wagner, Torgesen & Rashotte, 1999)
- Procedure: Repeat increasingly difficult nonsense words based on English sound patterns.

Participating Students

This study was conducted in Edmonton and Vancouver. Since no differences in results emerged between the two cities, the students from both sites are combined in this report. A total of 227 students in grades 7-9 participated in this study. They were divided into three groups: monolinguals, Early Arrival ELLs, and Late Arrival ELLs. The monolingual students were brought up with only English in the home and had very limited knowledge of other languages. The Early Arrival ELLs had been schooled in English in Canada for at least seven years (including daycare or preschool). Late Arrival ELLs had been schooled in English in Canada for less than seven years. Length of schooling was calculated by subtracting the age of onset of schooling from the age at testing. ELLs had diverse first language backgrounds, as shown in Figure 1.

Graphic 2. Similarities and differences between the monolingual, Early Arrival ELL and Late Arrival ELL students. Means and standard deviations (between parentheses) are reported.

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Number of students	43	128	56
Age at test (in years)	14 (1)	14 (1)	14 (1)
Years of English preschool and school	9.5 (1.2)	9.5 (1.3)	3 (1.9)
Non-verbal IQ	104 (14)	104 (16)	108 (18)
Verbal memory skills	10 (2)	11 (2)	11 (2)

FYI

Standard deviations (between parentheses in Graphic 2) measure variation within each group. A lower standard deviation indicates that values are closer to the mean.

Standard scores for the non-verbal IQ test range from 40 to 138. The standard mean of this test is 100, with a standard deviation of 15. Standard scores for the memory skills test range between 0 and 18, with a standard mean of 10 and a standard deviation of 3. As shown in Graphic 2, the three groups were at or just above the standard mean for both tests. Furthermore, statistical analyses showed that the three groups were comparable in age, non-verbal IQ, and verbal memory. Monolinguals and Early Arrival ELLs had very similar lengths of schooling (including pre-school) in English in Canada, whereas Late Arrival ELLs had been schooled in English for almost 3 years, on average.

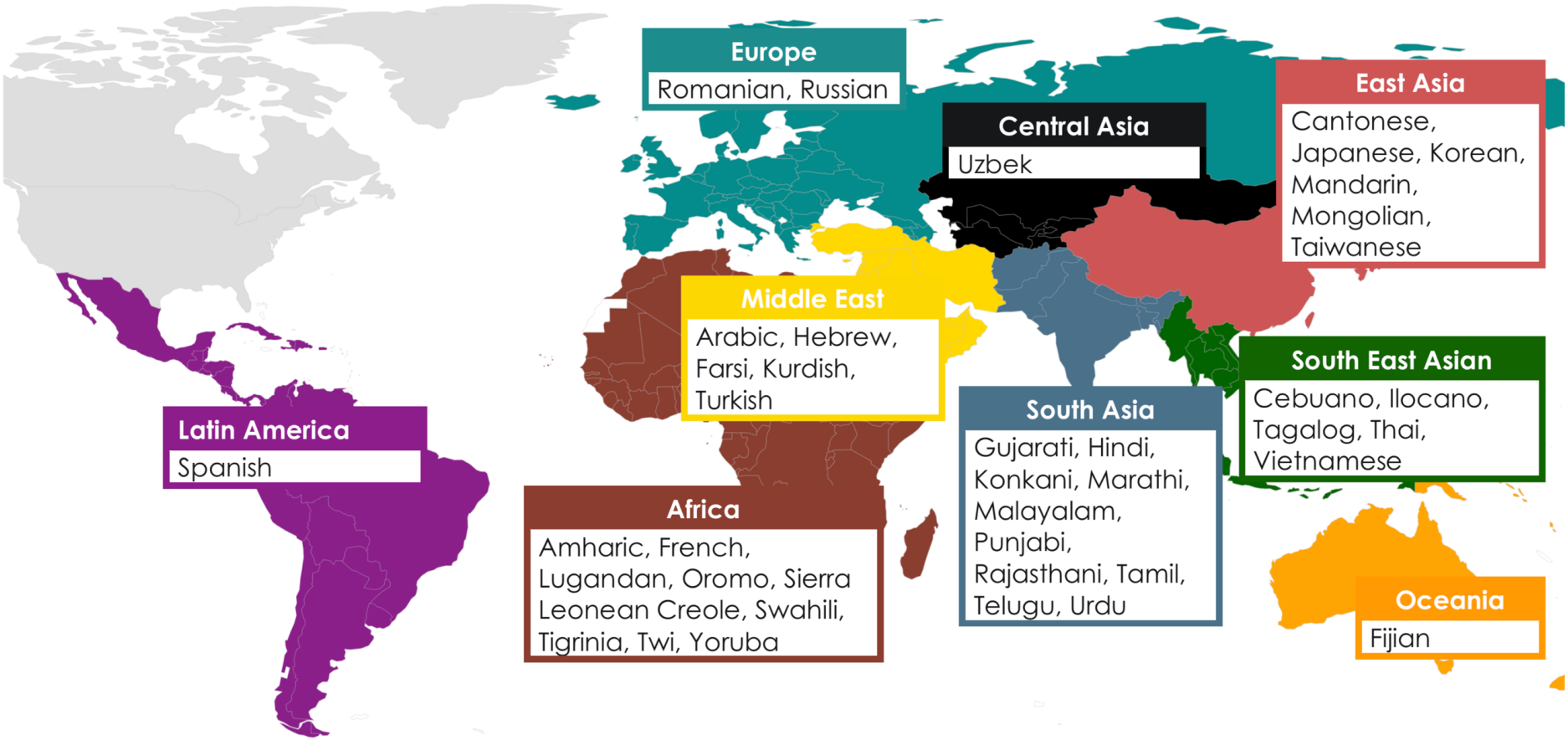


Figure 1. ELL students' first language backgrounds

Results of language and literacy tests

Vocabulary size

The standard scores for this test are below in Graphic 3. Statistical analyses showed that Late Arrival ELLs performed lower than the other two groups, but monolinguals and Early Arrival ELLs performed similarly. The scores for this test ranged between 20 and 160. The standard mean is 100. One standard deviation below is 85 and one above is 115. This means that students who scored below 85 or above 115 were considered to have low and high vocabulary scores, respectively. Graphic 4 presents the percentage of students in each group that scored in these ranges.

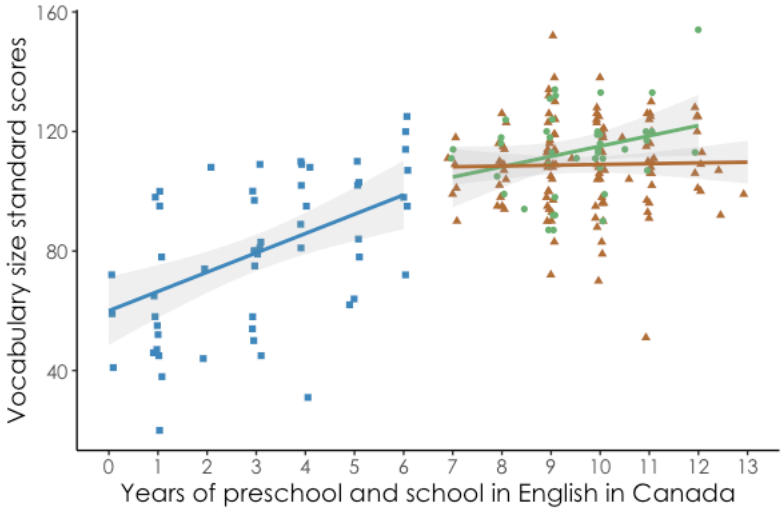
Graphic 3. Vocabulary size scores by group

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Vocabulary size	113.81	108.88	79.27

Graphic 4. Percentage of students in each group that scored below 85 (1 standard deviation below the standard mean) or above 115 (1 standard deviation above)

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Below 85	0%	4.84%	57.14%
Above 115	46.51%	33.06%	3.57%

Figure 2 shows the relationship between the three groups' vocabulary scores and their length of schooling in Canada. While Late Arrivals' vocabulary grows as a function of years of schooling, that is not the case for the other two groups, where additional years of schooling is not associated with an increase in scores.



FYI

In order to find out if a there was a relationship between length of schooling and test scores, we used correlations.

Figure 2. Relationship between vocabulary size scores and years of preschool and school

Word meanings

The standard scores for the word meanings test appear in Graphic 5. Statistical analyses revealed that monolinguals outperformed Early Arrival ELLs, and this group, in turn, performed better than the Late Arrival ELLs. The scores for this test range between 0 and 24. Its standard mean is 10; one standard deviation below is 7 and one above is 13. Therefore, students who scored below 7 or above 13 were considered to have low and high knowledge of word meanings, respectively. Graphic 6 presents the percentage of students in each group that scored in these ranges.

Graphic 5. Word meanings scores by group

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Word meanings	13	11.39	7.67

Graphic 6. Percentage of students of each group that scored below 7 (1 standard deviation below the standard mean) or above 13 (1 standard deviation above)

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Below 7	0%	5.83%	42.31%
Above 13	60.61%	27.5%	9.62%

Figure 3 shows the relationship between the three groups' word meanings scores and their years of preschool and school in English in Canada. While Late Arrivals' knowledge of word meanings grows as a function of years of schooling, there is no increase for the monolinguals and Early Arrival ELLs with more schooling.

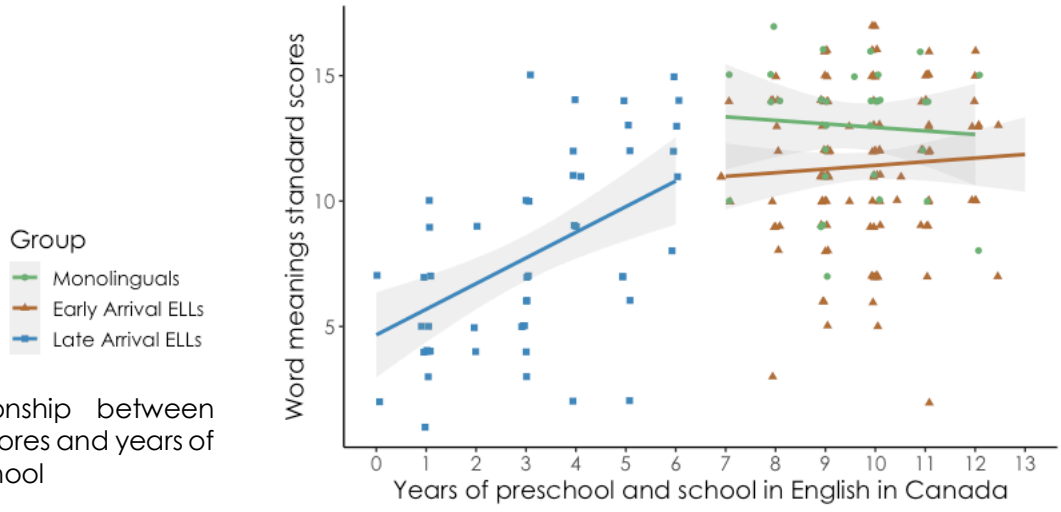


Figure 3. Relationship between word meanings scores and years of preschool and school

Grammar

The scores for this test appear in Graphic 7. These are percent accuracy scores and, as such, scores range between 0% and 100%. On this test, analyses showed that monolinguals were more accurate than both ELL groups and Early Arrival ELLs performed better than Late Arrival ELLs. Since this was not a standardized test, there are no standard scores to which to compare students' performance. To provide a benchmark, we used the monolingual students' mean (74.95%) and their standard deviation (9.82%). Graphic 8 shows how many ELLs scored lower than 65.13% accuracy and higher than 84.77% (one standard deviation below and above the monolingual students' mean).

Graphic 7. Grammar accuracy scores by group, in percentages

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Grammar	74.95%	70.15%	59.57%

Graphic 8. Percentage of students of each group that scored below 65.13% (1 standard deviation below the monolingual mean) or above 84.77% (1 standard deviation above)

	Early Arrival ELLs	Late Arrival ELLs
Below 77%	30.70%	71.43%
Above 84.77%	7.02%	2.04%

Figure 4 shows the relationship between the three groups' grammar accuracy scores and their length of preschool and school in Canada. Monolinguals' and Late Arrival ELLs' accuracy grows as a function of years of schooling; however, additional years of schooling did not result in increased scores for the Early Arrival ELLs.

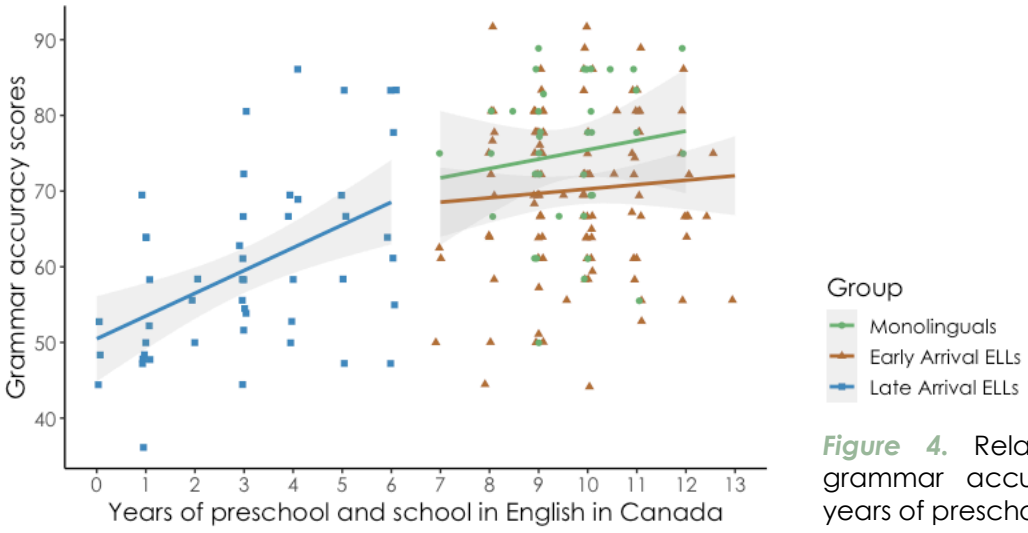


Figure 4. Relationship between grammar accuracy scores and years of preschool and school

Reading comprehension

Students' standard scores for this test appear in Graphic 9. Monolinguals performed better than the two ELL groups. In addition, the Early Arrival ELLs performed better than the Late Arrival ELLs. The scores for this test range between 1 and 99. The standard mean is 50; one standard deviation below is 29 and one above is 71. This means that students who scored below 29 or above 71 were considered to have low and high reading comprehension abilities, respectively. Graphic 10 presents the percentage of students in each group in that scored within these two ranges.

Graphic 9. Reading comprehension scores by group

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Reading	70.21	60.23	41.17

Graphic 10. Percentage of students of each group that scored below 29 (1 standard deviation below the standard mean) or above 71 (1 standard deviation above)

	Monolinguals	Early Arrival ELLs	Late Arrival ELLs
Below 29	0%	4.27%	24.59%
Above 71	51.72%	28.21%	8.20%

Figure 5 shows the relationship between the three groups' reading scores and their length of schooling in Canada. While Late Arrivals' reading comprehension grows as a function of years of schooling, that is not the case for the other two groups.

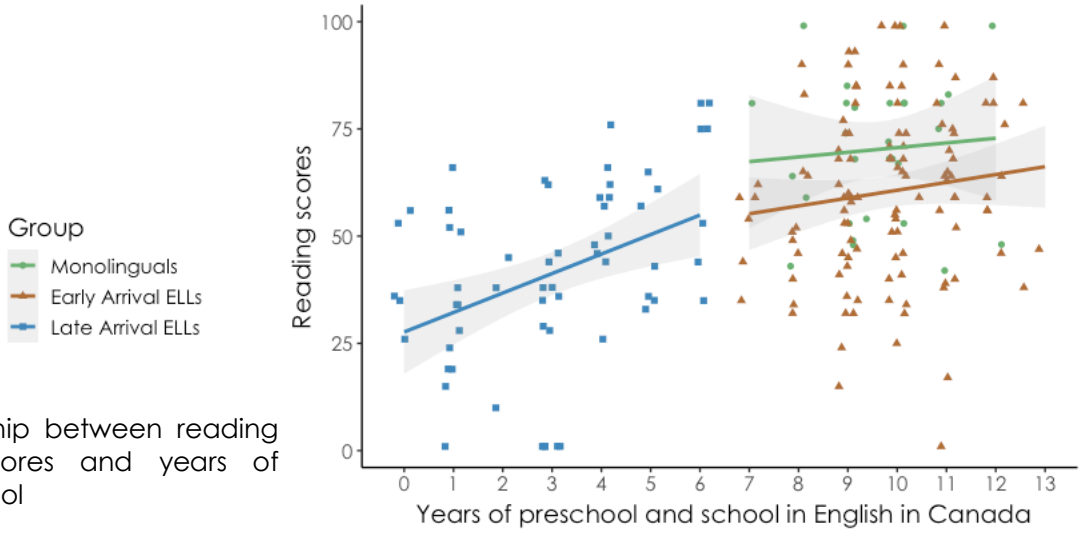


Figure 5. Relationship between reading comprehension scores and years of preschool and school

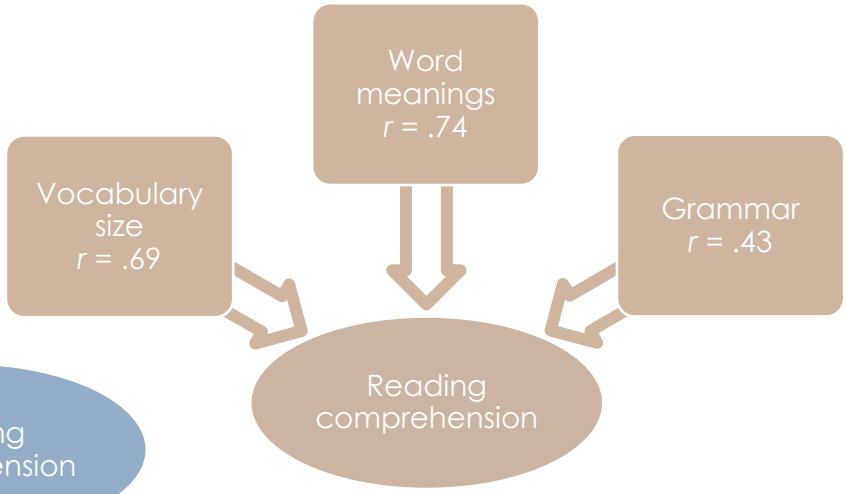
What predicts better ELL performance on the tests?

The secondary objectives of this study were 2) to examine the relationship between oral language and literacy skills, and 3) to determine the sources of individual differences in ELLs' performance.

Relationship between ELLs' language abilities and reading comprehension

The figures below illustrate the relationship (or correlation) between performance on the reading comprehension test and performance on the other tests in ELLs. Relationships or correlations were always positive, which means that students who performed better on the oral language tests also performed better on the reading comprehension test. Figure 6 shows the results for the Early Arrival ELLs and Figure 7 does so for Late Arrival ELLs.

Figure 6. (Right) Early Arrival ELLs' correlations between performance on reading comprehension test and performance on the oral language tests.



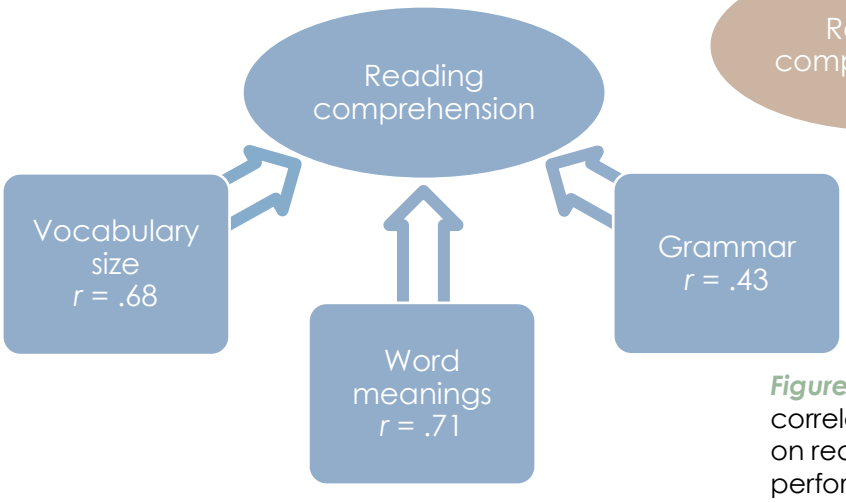


Figure 7. (Left) Late Arrival ELLs' correlations between performance on reading comprehension test and performance on the oral language tests.

FYI Boxes that describe the relationship between tests show an *r* value (the correlation coefficient). This is a value between -1 and +1 that describes the correlation between the two tests. Values closer to -1or +1 indicate a closer negative/positive relationship.

Relationship between ELLs' individual characteristics and their language and literacy performance

It is important to know what individual characteristics of ELL students influence their performance on the language and literacy measures. This is because our previous analyses revealed a wide range of individual variation in performance. Understanding which characteristics contribute positively or negatively to their performance can help to identify the characteristics of students who are at risk. From this section on, all ELLs are considered together and the division of Early and Late Arrival ELLs is no longer made.

Does parental education matter?

The majority of ELLs had parents with post-secondary education, as shown in Figure 8, indicating that the majority of ELLs had a high socioeconomic status background.

Parental education was related to performance on the grammar accuracy test. That is, ELLs with higher educated parents performed better on this test. Parental education did not influence performance on the other tests. These limited results are likely due to our sample being skewed toward more highly educated parents. A more diverse sample in terms of parent education might have yielded effects for all language and literacy tests.

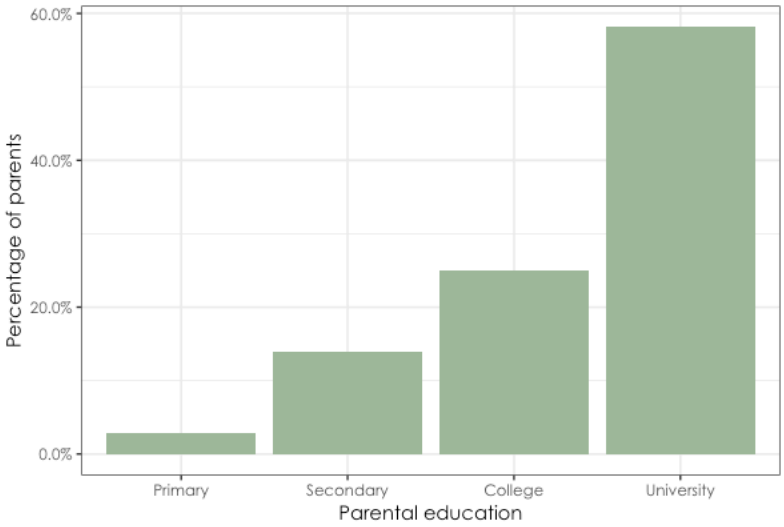


Figure 8. Percentage of ELLs' parents according to their level of education

FYI

In order to find out if a characteristic was related to better performance on a test, we used multiple linear regression.

Does the number of hours spent doing different English activities matter?

ELLs reported the number of hours per week spent doing activities in English:

1) Reading (books, short stories, poems, textbooks, articles, magazines – electronic or print)
2) Listening (listening to music and watching TV, movies, and Netflix)
3) Playing videogames
4) Browsing social media
5) Doing extra-curricular activities

ELLs' average number of hours per activity appear in Figure 9. We found that ELLs who spent more hours reading had better reading comprehension scores. However, ELLs who spent more hours watching TV in English or listening to English music had lower reading comprehension scores. Other activities did not have an impact on performance on reading. No individual variation in activities had impacts on the oral language tests.

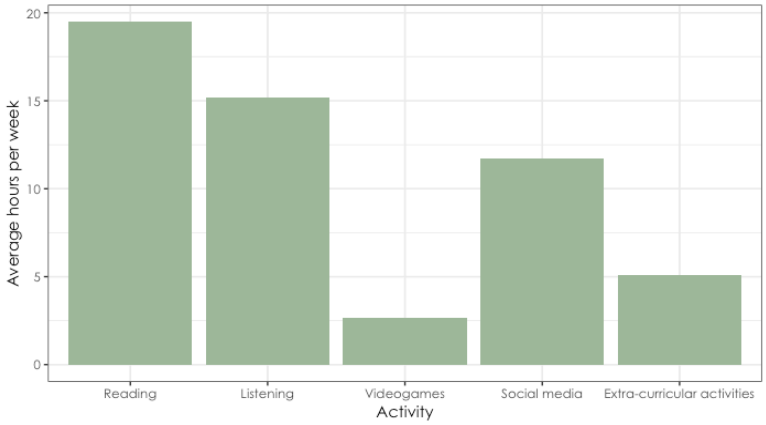


Figure 9. ELLs' average number of hours per week doing activities in English

Does language choice matter?

ELLs' reported on their English versus first language use with parents, siblings, and friends. They did so by using a scale between 1 and 5, where 1 indicated only or mostly use of the first language and 5 indicated only or mostly use of English.

The average on the scale, divided by interlocutor, is shown in Figure 10, where higher numbers indicate more use of English. ELLs' preferred language to communicate with siblings and friends was English, whereas they mostly used their first language with their parents.

Language choice with parents did not predict ELL performance on any of the tests. However, students who used more English with friends did better on all the tests, and students who used more English with siblings did better on the vocabulary size test.

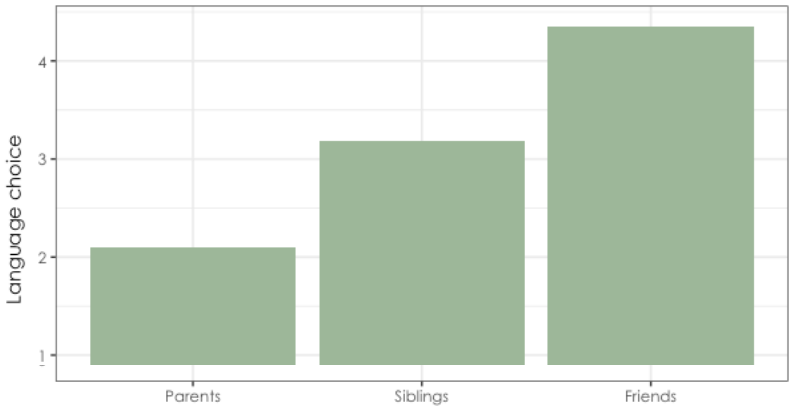


Figure 10. ELLs' language choice with parents, siblings, and friends.

Do cognitive skills matter?

We investigated two main cognitive skills: non-verbal IQ and verbal memory. ELLs' scores on these two tests are shown on page 4. Both skills had a positive effect on ELLs' performance. Specifically, ELLs with higher non-verbal IQ performed better on the vocabulary size, word meanings, and reading comprehension tests. ELLs' with higher verbal memory did better on the word meanings test.

Summary

A summary of the individual characteristics of ELLs that were found to influence their performance on each test appear summarized in Figure 11.

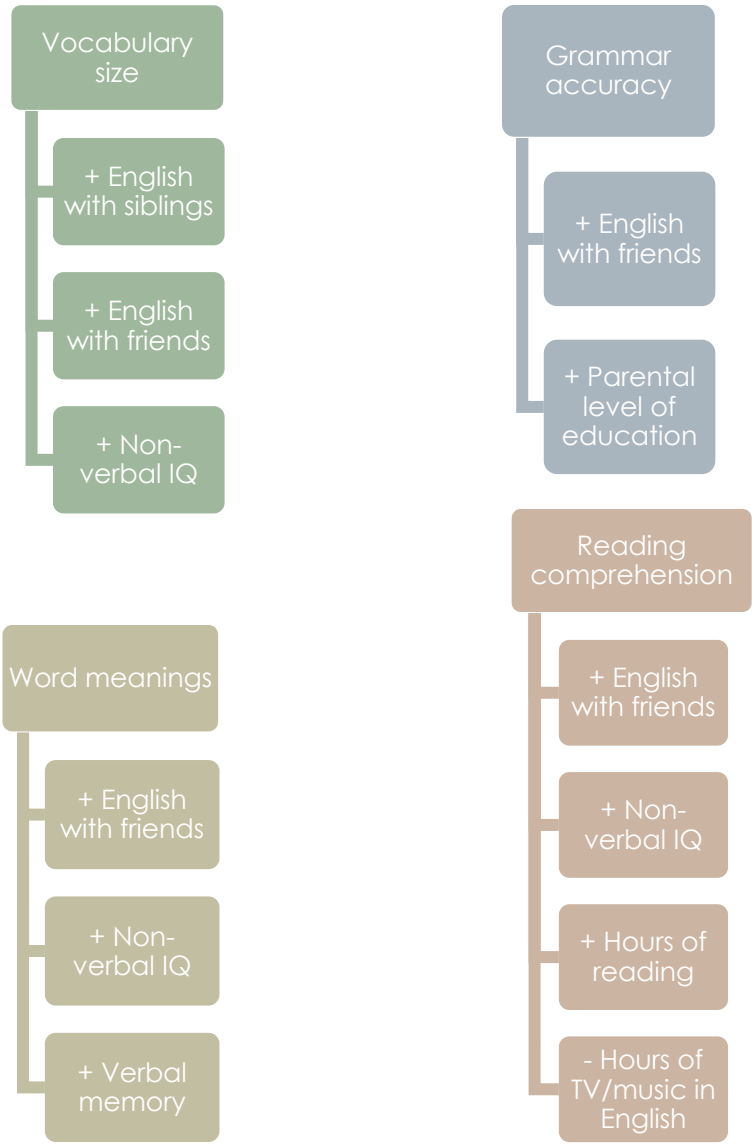


Figure 11. Summary of the relationship between ELLs' individual characteristics and test performance. The sign (+ or -) indicates whether the relationship was positive or negative.

KEY FINDINGS & IMPLICATIONS

In this section we outline the main findings from this study and the implications derived from them.

Finding #1: The majority of Early Arrival ELLs performed close to their monolingual classmates. However, not all Early Arrival ELLs had caught up with their monolingual peers with respect to language and literacy skills even after seven years of schooling in English in Canada. 5% of students in this group obtained scores less than 1 standard deviation below standard age expectations for vocabulary size, 6% for word meanings, and 4% for reading comprehension. On the non-standardized grammar test, 30% of Early arrival ELLs scored below -1 standard deviation of the monolingual mean.

Implication: It should not be assumed that all ELLs will perform like monolinguals after seven years of schooling on oral language and literacy in English. Some early arrival ELLs are falling behind in middle school and could benefit from ESL support.

Finding #2: Late Arrival ELLs performed lower than Early Arrival ELLs on all tests. In fact, a sizeable proportion of this group had scores that fell below the 1 standard deviation range of the standard mean for the test (and therefore were considered low): 54% of Early Arrival ELLs performed -1 standard deviation below the standard mean for vocabulary size, 42% for word meanings, and 25% for reading comprehension. On the non-standardized grammar test, 71% of Late Arrival ELLs scored below -1 standard deviation of the monolingual mean.

Implication: ESL support for ELLs who arrive to Canada during late childhood and adolescence may be critical for these students. They are facing the pressures of learning the curriculum with limited language and literacy skills. Even though these students have had schooling prior to arrival, and thus some academic content knowledge, low abilities in English skills could hinder their further academic growth.

Finding #3: There was a strong relationship between language and literacy skills, both in Early Arrival and Late Arrival ELLs.

Implication: Investing time in developing oral language skills (such as vocabulary or grammar) would be beneficial for ELLs: not only in order to develop these skills in particular, but also because they promote reading skills. Skipping oral language training to promote reading skills may not achieve the desired result because oral language skills provide the foundation for reading.

Finding #4: The more ELLs used English with friends, the better they did on all language and literacy tests. The effect of the use of English with siblings was limited to vocabulary size only. In contrast, we found no evidence that language choice with parents was related to performance on any of the tests.

Implication: ELLs may benefit from a diverse group of friends where English is the common language. On the other hand, maintaining ELLs' first language at home does not appear to hinder the development of English oral and literacy skills. Therefore, ELLs should **not** be encouraged to shift their language choice with their family members, especially their parents. In fact, previous research has shown that maintenance of the first language is important for family and community relationships (Tseng & Fuligni, 2000).

Finding #5: The time ELLs spent reading in English boosted reading comprehension whereas the time they spent listening to English on TV/in music negatively impacted reading comprehension.

Implication: ELLs should be encouraged to engage in language-rich activities that promote reading skills such as reading books or magazine articles, either as print or electronic media. Even though listening to English on TV shows or in music is an activity that has a language component, ELLs should be encouraged to spend more of their leisure time engaging in text-based activities.

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