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Learning to Read in Two Languages: Impediment or Facilitator?

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Abstract

The purpose of the study reported on in this paper was to investigate the concurrent development of first- and second-language reading and spelling skills. The study's participants were 47 grade one children enrolled in a Canadian French-Immersion program and their first language was English. The following skills were tested at the beginning and end of the children's school year: word reading, phonological awareness, oral-language proficiency, spelling and pseudoword-decoding. Descriptive statistics and ANOVAs revealed that there was an improvement in French and English reading and spelling skills from the beginning to the end of the year with a tendency for French skill development to be faster than English. English reading and spelling skills continued to develop throughout the year despite a lack of formal instruction in English. All English and French skills improved over time. However, the rate of development of some of the English skills was slower than what was reported in the standard scores for English-only students. Results suggested that learning in a second language proved to be both a facilitator and an impediment, depending on the particular skills examined.

1 Introduction

Learning to read in two languages can "be viewed as an impediment to or a facilitator of the development of reading skills in a second language" (Cummins, 1981, as cited in Lesaux & Siegel, 2003, p. 1005). For this reason, as Lesaux and Siegel explain, it is necessary to examine the reading development of children who are learning to read in a second language. Also, as Geva, Yaghoub-Zadeh and Schuster (2000) note, it is important to study the first- and second-language development of various components of reading to ensure that children do not become over- or under-identified as being at risk of a reading problem.

Much of the research that has explored the concurrent development of first- and second-language reading skills has focused on either English as a second language or on languages other than English and French (e.g. Chiappe & Siegel, 1999; Jongejan, Verhoeven, & Siegel, 2007; Lesaux & Siegel, 2003; Verhoeven, 1990; 2000). A limited number of studies have explored the concurrent development of reading and spelling with French as a second language where the first language is English (e.g. Cormier & Kelson, 2000; Endler, 2008; Tingley et al., 2004). When examining the development of reading, it is also important to consider spelling development. Spelling scores are highly correlated with students' second-language reading skills (Fitzgerald & Shanahan, 2000; Stotsky, 1983). These studies have been conducted in the context of early French Immersion (FI). Canada's FI programs are designed to enable an individual to develop proficiency in both French and English. In FI programs, school subjects are taught in French, the second language. Typically, English Language Arts is not introduced into the curriculum until grade 3 (Turnball, Lapkin, & Hart, 1998). FI programs are based on the assumption that French-English bilingualism

can be developed without negatively affecting the development of the first-language skills (Comeau, Cormier, Grandmaison, & Lacroix, 1999; Genesee, 2007; Swain & Lapkin, 1982).

Some of the skills that have been studied in terms of predictors of first and second language reading and spelling development are as follows: phonological awareness (Chiappe & Siegel, 1999; Comeau et al., 1999; Geva et al., 2000; MacCoubrey, Wade-Woolley, Klinger, & Kirby, 2004); pseudoword-decoding (Comeau et al., 1999); oral-language proficiency (Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Geva & Petrulis-Wright, 2000); memory (Geva & Siegel, 2000; Gholamain & Geva, 1999; Wimmer, Mayringer, & Landerl, 1998); speed of lexical access and (see Vukovic &Siegel, 2006). These studies suggest that reading and spelling skills may develop in a similar pattern. However, the rate of development of these skills may vary depending on the language and the specific skill being examined (Chiappe, Siegel, & Wade-Woolley, 2002; Geva, Wade-Woolley, & Shany, 1993; Jongejan et al., 2007).

The review of the literature conducted for this paper uncovered few studies that examined the reading and spelling skills of FI students. Endler (2008) investigated the predictors of early reading in a second language in a FI context. Endler also briefly examined the concurrent development of word-identification skills and, to some degree, spelling skills. She concluded that while both skills appeared to improve over time, she was not able to compare growth in skills due to issues with task equivalency. Unlike the study reported on in this paper, she did not focus on skill development from the beginning to the end of grade one nor did she track the concurrent development of other related skills such as phonological awareness, oral-language proficiency and pseudoword-decoding.

The study reported on in this paper explored the concurrent development, from October (Time 1, T1) to May (Time 2, T2) , of English and French reading and spelling skills in a group of grade one FI children whose first language was English. Specifically, the research questions were as follows:

1. Do English and French phonological-awareness skills develop at the same rate?
2. Do English and French oral-language proficiency skills develop at the same rate?
3. Do English and French word-reading skills develop at the same rate?
4. Do English and French pseudoword-decoding skills develop at the same rate?
5. Do English and French spelling skills develop at the same rate?

Although other reading skills play an important role in reading development, it was beyond the scope of this study to include all reading and spelling skills. However, the skills focused on in this study have been identified in the literature as significantly correlated with and/or significant predictors of L1 and L2 reading development (e.g. Comeau et al., 1999; Fitzgerald & Shannahan, 2000; Geva & Petrulis-Wright, 2000; Joy, 2003).

According to Cummins' (1983) common underlying proficiency principle, it would be expected that L1 reading development would parallel L2 reading development. Cummins posited that certain first language skills can be positively transferred and assist in the development of the corresponding L2 skills and vice versa. However, factors such as differences in orthography, previous exposure to the skills in the home environment and language of instruction may impact the rate at which these skills develop. For example, phonological awareness skills develop in the L1 prior to school and, therefore, are unlikely to be better developed in the L1 than the L2.

2 Review of the literature

Cormier and Kelson (2000) demonstrated that the spelling of plural morphemes (e.g. journal and journaux) among grade one to three FI students was more difficult in French than in English. While these two orthographies are not identical, their reliance on the alphabetic system may allow skills learned in one of the languages to transfer to the other language. Cormier and Kelson also found that the spelling of plural morphemes develops in parallel in children who are learning two languages and that there appears to be an advantage to learning articulated over unarticulated mor-

phemes. Geva and Clifton (1994) compared reading skills on measures of speed and accuracy in grade two FI students and students enrolled in English-only programs. The two groups of students did not differ significantly in terms of accuracy. However, the English students displayed a clear advantage in terms of speed and fluency. Geva and Clifton concluded that learning to read fluently develops at a slower rate in FI students than in English–only students.

Tingley et al. (2004) studied the effects of early L2 exposure on phonological-awareness skills by comparing a group of grade one FI and English-only students. In general, all students in the study performed better on English phonological-awareness tasks than on French tasks. When comparing French versus English performance of these students, the authors observed that the FI students performed better on English rather than French syllable-awareness and phoneme-awareness tasks. However, they performed better on French than on English real-word and non-real-word reading tasks (e.g. broom vs foom).

As part of a larger study, Endler (2008) tracked the concurrent development of first- and second-language word-identification and spelling skills in FI students in kindergarten to the end of grade one. She measured these skills by examining students' reading and spelling performance using standardized and experimental instruments as a measure of English and French performance. Results indicated that, although there was no formal instruction in English, reading and spelling skills appeared to develop in a similar pattern in both languages from kindergarten to late grade one. Endler suggested that it is the cross-language transfer of the second-language skills to the first language which allow continued development of the first-language skills in the absence of formal instruction in this area. It should be noted that Endler was not able to fully compare L1/L2 spelling development as her French spelling measure was intended to capture words that are part of the grade one curriculum and did not contain items of increasing difficulty.

Jongejan et al. (2007) studied the phonological awareness, word/pseudoword (e.g. riff) reading, and word/pseudoword spelling skills of two groups of students: those with English as a second language (ESL) and those with English as a first language. The authors found that the skills appeared to develop in a similar pattern with the ESL learners' lexical-access skills being stronger than that of their English counterparts. However, the English students' syntactic-awareness and verbal working-memory skills were better developed than those of the ESL learners. These results suggest that it is important to examine separately the development of each spelling and reading skill in order to better understand how it develops in each language.

Those studies that have been conducted with second-language learners suggest that the rate of reading development of these children is similar to those learning only one language. For example, Chiappe and Siegel (1999) found that phonological-processing and word-recognition skills predicted reading and spelling skills in ESL and English-speaking children. However, they did not differ significantly from one another across languages in terms of their development. Regardless of whether it was a first or second language, reading development followed a similar trajectory.

The importance of these variables (e.g. phonological awareness, word recognition) as predictors of reading and spelling development cannot be underestimated. However, knowledge of the developmental trajectories of these skills is also important in order to understand the process of reading and spelling development for these learners, to establish appropriate goals for their achievement and to ensure the design of effective teaching methods to promote success (Lesaux, Rupp, & Siegel, 2007).

Unlike the study reported on in this paper, much of the research on the concurrent development of reading in bilingual children has involved the study of other languages and/or reading measures (Geva et al.,1993; Geva & Clifton, 1994; Gholamain & Geva, 1999). Endler (2008) studied the concurrent development of reading and spelling skills in FI students. However, she tracked the development of reading and spelling skills from kindergarten to grade one and did not include as many measures or the same measures of reading and spelling skills as were included in the present study. This paper reports on a study of the concurrent development of first- and second-language

reading and spelling skills of a group of grade one FI students from the beginning to the end of the school year.

3 Methods

3.1 Participants

The 47 participants were drawn from three classes of grade one FI in Newfoundland and Labrador, Canada. Only those students whose parents provided consent and whose first language was English were included in the study. Formal English instruction was not introduced to FI students in these schools until grade three. Physical Education and Music are the only subjects taught in English in kindergarten and grade one. In grade three, English instruction is introduced with the number of hours gradually increasing each year.

3.2 Instruments

A methodological issue of concern in all bilingual and cross-linguistic studies of basic reading skills relates to task equivalency (Geva & Wade-Woolley, 1994; Koda, 1994). This study focused on tasks that were equivalent on some dimension. For example, the oral-language proficiency tasks were parallel on the dimension of content. That is, the English and French tasks asked exactly the same questions. Significant correlations (see Joy, 2003) on the English and French parallel tasks suggest that most of the tasks are based on similar principles and thus may be addressing similar underlying skills. As French and English tasks did not contain the same number of items, percentages of items correct were calculated.

3.2.1 Vocabulary

To control for general vocabulary knowledge that might influence skills in early reading and spelling development, the Peabody Picture Vocabulary Test-Revised (PPVT-R, form L; Dunn & Dunn, 1981) was administered individually in English to each child in the fall (T1) of the grade-one school year. This task involves examining four pictures on a page and pointing to the item requested by the examiner (e.g. “Point to the picture of the vase.”). The test includes 175 items and testing was discontinued when the student made six out of eight errors.

3.2.2 Phonological awareness

Phonological awareness was measured in French and English in T1 and T2, using the Rosner Test of Auditory Linguistic Skills (Rosner & Simon, 1971) and the French Auditory Analysis Test (Cormier et al., 1994). These measures require the child to delete parts of a word (e.g. the first or second syllable in two-syllable words, or the initial phoneme in a consonant cluster, such as “please” without the “z” sound). The English test includes 18 items and the French test includes 42 items. Testing was discontinued for both tasks when a student made four consecutive errors.

3.2.3 Oral-language proficiency

The French (Chevrier, 1988) and English (Thorndike, Hagen, & Sattler, 1986) versions of the Sentence Repetition subtest of the Stanford-Binet were used in T1 and T2 to determine participants’ oral-language proficiency levels in French and English. These tasks measure students’ ability to integrate their knowledge of vocabulary, meaning, sentence structure and grammar by requiring them to repeat verbatim, sentences of increasing length and complexity. The French and English tasks contain 42 items with testing discontinued after three consecutive errors.

3.2.4 Word reading

Children's English and French word-reading skills were assessed using the Wide Range Achievement Test-Revised (WRAT-R; Jastak & Jastak, 1984) and the French Individual Achievement Test (FIAT; Wormeli & Ardanaz, 1987) in T1 and T2. These measures required students to read French and English words of varying length and familiarity. The English version consists of 15 letters for recognition and 42 unrelated words with testing discontinued after 10 consecutive errors. The French measure contains five letters for recognition and 81 unrelated words with testing discontinued after 6 consecutive errors.

3.2.5 Pseudoword-decoding

Pseudoword (nonword)-decoding or decoding nonsense words, is believed to provide insight into students' phonological processing skills as they must rely on their decoding skills to pronounce "nonwords" (e.g. ift). Children's French and English word-attack skills were assessed using the Word-Attack subtest of the Woodcock Reading Mastery Test-Revised (Woodcock, 1987) and an experimental French pseudoword-attack task (Geva, 1995) (Cronbach's alpha at time 2 = .92) in T1 and T2. Students were required to read "nonwords" (e.g. "ift, raff") that follow the rules of English or French word formation. The English version contains 45 "non-words" with testing discontinued after six consecutive errors. The French task contains 61 "non-words" with testing discontinued after five consecutive errors.

3.2.6 Spelling task

Children's French and English spelling skills were assessed using the spelling subtests of the Wide Range Achievement Test-Revised (WRAT-R; Jastak & Jastak, 1984) and the Canadian French Individual Achievement Test (FIAT; Wormeli & Ardanaz, 1987) in T1 and T2. Although letter writing is not part of the French spelling task, students were asked at the beginning of this French task to print the same 13 letters that were recited during the English spelling task. Following the letter writing, students were read a word. The word was used in a sentence and then students were given the word again and asked to print it. The English task contains 40 items while the French task contains 55 items. Testing was discontinued after a ceiling of 10 consecutive errors.

3.3 Procedures

The spelling task was administered by the classroom teacher and/or a graduate student in a group setting. All other tasks were administered to each student individually by the principal investigator of the study or trained graduate students. Before beginning the tasks, all directions were read to each student in English followed by one or two examples of each task.

3.4 Analyses

In order to examine the concurrent development of English and French reading and spelling skills over time, a series of two-way repeated measures ANOVAs were carried out with language and time as the two repeated measures. The analyses focused on a comparison of the developmental patterns associated with the mean percent accuracy rates on the reading and spelling measures in English and French. In order to determine whether the rate of development of English word-reading and spelling skills were the same for a second-language learner as would be expected for children learning to read in an English-only program, a paired sample t-test was carried out using the standard scores from these measures.

4 Results

Table 1 provides the summary statistics for the French and English reading skills as well as the results of the two-way repeated measures ANOVAs which were conducted to determine the effects of language and time on these variables. Percentages rather than norms were used in the analyses because these can yield more information than standard scores about the development of these skills over time. Standard scores for English measures are presented whenever available. The standard score for English vocabulary was within the normal range at the onset of the study suggesting that students' overall ability was within the average range. In general, on the measures that were administered both at T1 and T2, the mean percentage scores increased from T1 to T2 but the trajectories were steeper for the French scores on most of the measures meaning that students' French skills developed at a faster pace.

	T 1		*T 2*		*F*	*F*	*F*
Variables	***Mean***	***S.D.***	***Mean***	***S.D.***	***Time***	***Lang.***	***T x L***
PhonoE	43.97	20.59	56.97	19.78	66.11***	147.08***	.000
PhonoF	20.31	13.94	33.38	13.05			
SenRepE	39.21	8.68	42.60	8.82	72.60***	408.71***	7.71**
SenRepF	17.02	7.11	24.98	6.68			
WR E	25.79	3.33	30.57	5.48	132.77***	1999.35***	7.61**
S.S	92.53		86.94				
WR F	5.84	1.71	12.40	4.49			
Pse.E	.80	2.43	4.97	7.03	27.37***	4.09*	3.84
Pse.F	1.15	2.44	7.57	9.86			
SpellE	.85	1.59	3.30	3.31	72.25***	76.04***	17.99***
S.S	89.47		82.28				
SpellF	2.28	2.38	7.51	4.65			
VocabE	40.21	7.40					
S.S	97.00	7.00					

Note 1: * p < .05, ** p < .01, *** p < .001

Note 2: Mean = Mean Percent Correct Responses; S.D.= Standard Deviation; WR E/F = English/French Word Reading; Pse.E/F = English/ French Pseudoword-Decoding; Spell E/F = English/ French Spelling; S.S.= Standard Score; PhonoE/F = English/French Phonological Awareness; SenRep E/F = English/French Sentence Repetition/Oral-Language Proficiency; VocabE = English Vocabulary, T x L = Time Multiplied by Language.

Table 1: Descriptive statistics and ANOVA results for English and French reading skills at T1 and T2

1. Do English and French phonological-awareness skills develop at the same rate?

Students' English and French phonological-awareness skills developed significantly from T1 to T2 ($F= 66.11$, $p<.0001$). Students' English scores were significantly higher than their French scores ($F= 147.08$, $p < .0001$). However, the interaction between language and time was not significant. Thus, even though there was an improvement in phonological-awareness skills from T1 to T2, the rate of development of these English and French skills appeared to be similar (see Fig. 1).

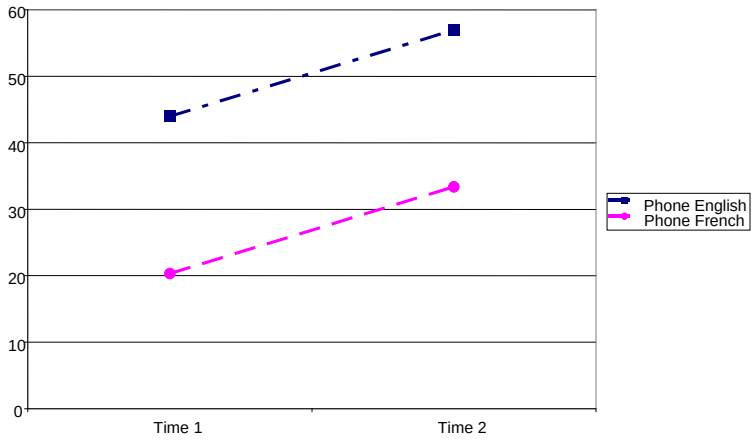

Fig. 1: Mean percent correct scores for English/French phonological awareness.

2. Do English and French oral-language proficiency skills develop at the same rate?

Students' oral-language skills, as measured by the sentence-repetition task, developed significantly in their English and French from T1 to T2 ($F= 72.60$, $p<.0001$). Students' English oral-language skills were significantly better developed than their French oral-language skills ($F= 408.71$, $p<.0001$). However, as can be seen in Figure 2, it was students' French oral-language skills, as measured by Sentence Repetition (SENREP), which displayed a significantly faster rate of development than the English skills from T1 to T2 ($F= 7.71$, $p<.01$).

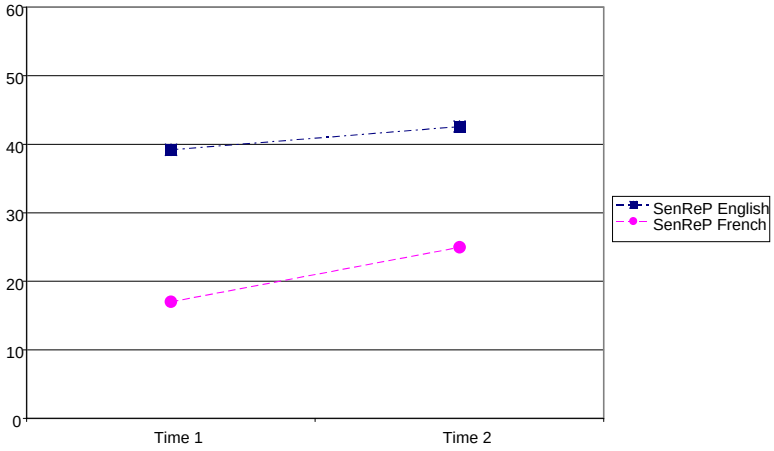

Fig. 2: Mean percent correct scores for English/French sentence repetition/OLP.

3. Do English and French word-reading skills improve and develop at the same rate?

Students' English and French word-reading skills increased significantly from T1 to T2 ($F= 132.77$, $p<.0001$). Students' English word-reading scores were significantly higher than their French word-reading scores at both times ($F= 1999.35$, $p<.0001$). Finally, as can be seen in Figure

3, students' French word-reading skills improved at a faster rate than did their English word-reading skills, thus creating a significant time by language group interaction (F= 7.61, p<.01).

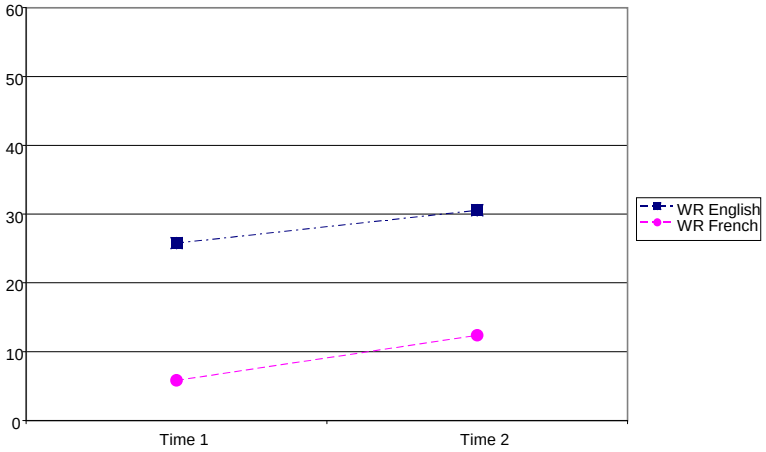

Fig. 3: Mean percent correct scores for English/French letter and word reading.

4. Do English and French pseudoword-decoding skills develop at the same rate?

Students' English and French pseudoword-decoding skills increased significantly from T1 to T2 (F= 27.37, p< .0001). Students performed significantly better in French than in English (F= 4.09, p<.05). However, both English and French pseudoword-decoding skills appeared to develop at a similar rate throughout the year (see Fig. 4).

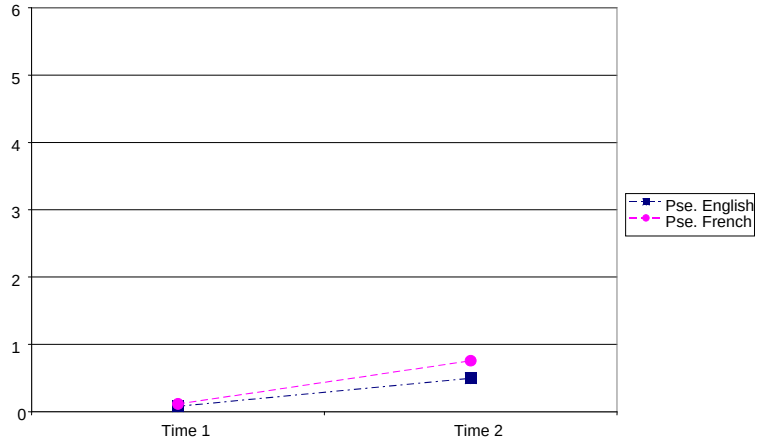

Fig. 4: Mean percent correct scores for English/French pseudoword-decoding.

5. Do English and French spelling skills develop at the same rate?

Students' English and French spelling skills improved from T1 to T2 (F=72.25, p< .0001). A language effect (F=76.04, p< .0001) was also observed with the French spelling scores significantly higher than the English spelling scores. A significant interaction between time and language (F=17.99, p<.0001) occurred: the rate of French spelling skill development increased at a faster rate than the English spelling skill development (see Fig. 5).

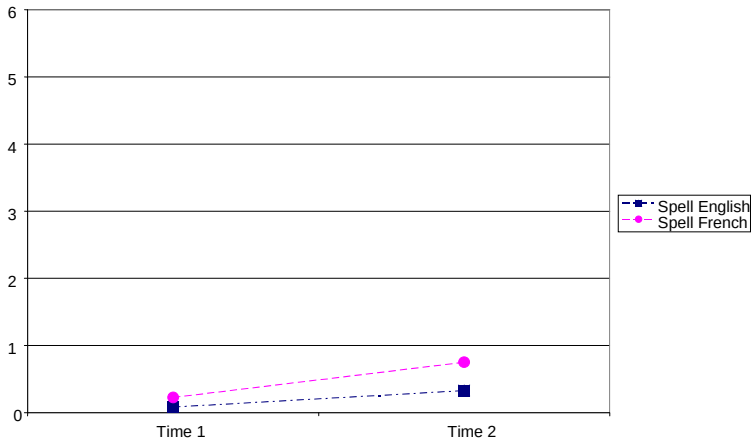

Fig. 5: Mean percent correct scores for English/French spelling

5 Discussion

Results revealed that students' developmental patterns varied depending on the specific skill, the language and the timeframe being considered. Students' second-language development paralleled that of their first-language development. Likewise, Cummins' (1981) hypothesized that children who are being taught to read in a second language, as are FI students, simultaneously develop basic underlying cognitive-linguistic skills common across both languages.

5.1 Phonological awareness

The results relating to a language effect indicate that students' English phonological-awareness skills are significantly better developed than their French phonological-awareness skills throughout the year. These findings replicate those of Tingley et al.'s (2004) study of FI students. Students' English phonological-awareness skills may be better developed because of their English home environment and their overall exposure to English print. Given that French is the language of instruction, it would be expected that French phonological-awareness skills would develop at a faster rate than the English phonological-awareness skills.

The lack of difference in the rate of development of these French and English skills from T1 to T2 may be attributed to the test instruments' lack of sensitivity to differences in skills at this young age. It is also possible that students had not yet had enough French exposure to allow these skills to adequately develop (see Bialystok & Herman, 1999 for similar results). Other studies (e.g. Chiappe & Siegel, 1999; Chiappe, Siegel & Gottardo, 2002; Jongejan et al., 2007; Tingley et al., 2004) have tracked the first- and second-language development of phonological awareness, using a cross-sectional approach or a sample of different students at various grades. However, this study tracked the concurrent development of French and English phonological-awareness skills using the same group of children.

5.2 Oral-language proficiency

As might be expected, students' oral-language proficiency skills were better developed in English at T1. However, their French oral-language proficiency skills developed at a faster rate than their English skills. Lesaux and Siegel (2003) noted similar results when studying a group of English and ESL kindergarten and grade two students. It would be expected that these first-language

skills are developing prior to grade one. In fact, these skills may have facilitated learning to read in the second language.

5.3 Spelling and pseudoword-decoding

French spelling and French pseudoword-decoding skills were better developed than the English skills at both T1 and T2. Spelling and pseudoword-decoding skills are usually not well developed prior to formal schooling in either the first or second language. However, as students learned more advanced rules such as grapheme-phoneme correspondence rules, they may have transferred this knowledge to the first language. The English spelling skills continued to develop without formal instruction. However, the standard scores for the English spelling task suggest that the rate of development was slower than would be expected for children who learn to spell in an English-only program. T-test scores identified a significant drop in English spelling standard scores from T1 to T2.

- *Pseudoword-decoding*

Tingley et al. (2004) also found that grade one FI students performed better on the French than on the English pseudoword-decoding tasks. However, the authors noted that although grade one FI students performed better in the French than the English pseudoword-decoding task, kindergarten students' English and French performance on this task was similar. Lesaux and Siegel (2003) reported similar results with ESL and English first-language students. In grade two, ESL students performed better than English first-language students in the areas of spelling and pseudoword-decoding. In kindergarten, the advantage was observed for the English students.

It is possible that the lack of difference in the rate of development of the English and French pseudoword-decoding skills may be attributed to a floor effect. Students were possibly unable to complete many items on the French or English task due to the items' level of difficulty. Low scores may reflect a need for a higher level of phonological awareness that is not well developed before grade one in the French or English. Students in Newfoundland and Labrador are taught grapheme-phoneme correspondence rules using a whole-language approach. Whole-language instruction may be adequate for some children, while others may need more direct and systematic instruction in grapheme-phoneme correspondence in order to develop their orthographic knowledge and to apply it to the first language.

The lack of differentiation between the rate of English and French skill development for pseudoword-decoding may be understood by considering these results within a broader picture of language and reading development. These children likely come to school with phonological-awareness and good letter-naming skills as well as the ability to recognize some high-frequency words. However, since the French and English alphabet is the same, students can use these skills to attack words as well as pseudowords. They can also apply these skills when attempting to spell a word.

- *Spelling*

The present study focused on students' spelling ability in both French and English. The second-language exposure in the classroom likely allowed for faster development of the French spelling skills. Lesaux and Siegel (2003) found similar results with grade two ESL and English first-language students. It is also possible that orthographic depth may have been a factor. English is considered to be a deep orthography, because both word regularity and frequency impact performance (Content, 1991). French, on the other hand, is viewed as a more transparent or intermediate, as opposed to a deep orthography because it is more influenced by word regularity (Lafrance & Gottardo, 2005).

5.4 Word reading

From the onset of the study, English word-reading skills were better developed than the French word-reading skills and they continued to develop despite no direct English instruction. This English advantage may be the result of exposure to English print and oral language outside school. The English word-reading skills may not need direct instruction in order to be learned. However, standard scores for the English task suggest that, although these skills developed, the rate of development was slower than what would be expected for English-only students. Geva and Clifton (1994) noted similar findings in other skill areas and suggested this lag is only temporary.

Results related to the differences in the rate of acquisition of word-reading skills in French and English are congruent with Endler's (2008) results. The results of this study suggest that exposure to formal second-language reading instruction as well as other factors such as print and oral language exposure in the first language help to boost word-reading skills in the second language. Contrary to the present study, Tingley et al. (2004) observed, that grade one FI students' word-reading skills were better developed in French, the second language than in English. Classroom observations were not conducted in these studies. The discrepancy in results between Tingley et al.'s research and the present study may be attributed to the use of different test instruments. It is possible that Tingley et al.'s students were given more direct instruction in word-reading skills than what was offered to participants in the present study. The home environment of the FI students in Tingley et al.'s study may have provided more exposure to French reading than that of the students in the present study.

6 Conclusion and implications

This study began by asking if learning in two languages is a facilitator of or impediment to the development of reading skills. Results suggest that, at least for these students, learning in a second language proved to be both a facilitator and an impediment, depending on the particular skills examined. While English and French reading-related skills developed concurrently, their rate of development in each language and across languages varied depending on the skill. However, for this group of children, when compared to the standard performance of English-only students, a drop in the standard scores of the word-reading and spelling skills was noted. This drop in scores suggests that FI students' skills in these areas are developing at a slower rate than would be expected for English-only students. Further investigation is needed to study this lag and determine if this lag occurs in all skill areas and to determine if and when these students' skills "catch up" and develop at a rate expected of English-only students.

This study adds to the literature by expanding the language and skill areas investigated. Results emphasized the importance of consideration of the specific skill areas when researching reading-related skills in bilingual children, as not all skill areas develop at the same rate in each language or across languages. Prior research has focused on the importance and universality of phonological awareness as a predictor of reading in a first and second language but few researchers have focused on the rate of development of this skill between languages, especially in the area of FI.

The sample size may place limitations on the results. The teaching style of the teachers may have also created a bias. A number of testing issues also pose limitations. The FIAT, the only achievement test available at the time of this study, is dated. Some of the parallel tasks such as the French/English word-reading tasks, have a different number of items, making a comparison of the two tasks difficult. Task equivalency between parallel reading and spelling measures may also impose limitations on the study as it is very difficult to find assessment instruments which can be controlled on all dimensions (e.g., word length, word frequency) of equivalency. Observations would have provided additional information about the students' exposure to and instruction in the second language.

Results of this study emphasize the importance of consideration of specific skill areas when researching or evaluating the concurrent development of reading-related skills in bilingual children, as not all skill areas developed at the same rate in each language or across languages. Knowing how these skills develop in the first and second language is important information for teachers in establishing appropriate programming for this particular grade level. Children in this study may have benefited from more direct instruction in phonological awareness than was available through a whole-language approach. It is possible that with direct instruction, the rate of development of students' phonological awareness and pseudoword-decoding skills may have been significantly faster. As well, if these children were encountering a lag in their skill development, extra practice would have been beneficial to enhance development of these skills. It is also important to monitor the students' skills and not automatically assume that a lag indicates the student is encountering difficulty learning in two languages.

Further investigation is needed to better understand the conflicting finding in the area of word-reading development. Why do children in this study and Endler's study have better English word-reading skills than the children in Tingley et al.'s study? Does it relate to teaching style/ instruction or the background of the children? It would be interesting to explore why the rate of development of all these skills was not faster in the second language as would have been expected. Further studies might address what factors might be attributed to these differences in the rate of skill development.

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