

The concurrent development of spelling skills in two languages

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Abstract

The study reported on in this paper investigated the concurrent development of spelling in children learning two languages. The study compared over time and between languages the types of spelling errors made in English as a first language and French as a second. Forty-seven grade one English-speaking children completed an English and French spelling task in October and May of the school year. The study relied on a repeated measures design using 2-tailed paired sample *t*-tests at the beginning and end of the school year. Results revealed students made more basic spelling errors at the beginning of the year and more complex spelling errors at the end of the year in both French and English. Despite the lack of direct instruction in English, students' English spelling skills developed over the course of the year suggesting that transfer of skills was occurring between languages.

Keywords: spelling development, elementary education, bilingual teaching, language teaching, second-language learning.

Introduction

Learning to spell is important as it is intricately connected with learning to read (Ehri, 2000). However, it is a complex developmental task because it requires children to learn the sound-symbol connection as well as more than 2000 rules of the language (Venezky, 1970). It can be a difficult task in the English language which is made up of about 40 units of sound with only 26 letters used to represent them (Treiman, 1993). When children are learning to spell in a second language in addition to their first, spelling can become even more complex. A number of studies have reported the impact of both negative and positive language transfer in children learning two languages (see Fashola, Drum, Mayer & Kang, 1996; San Francisco, Mo & Carlo, 2006; Wang and Geva, 2003). Language transfer refers to the impact of one's knowledge in one language on learning or performing in another language (Figueredo, 2006).

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The concurrent development of spelling skills in two languages has not been studied extensively. Studies that have been conducted suggest that orthographic depth and the similarities of the languages involved affect how easily and whether or not information is transferred from one language to another (see Arab-Moghaddam & Senechal, 2001; Davis, Carlisle & Beeman, 1999; Liow & Lau, 2006). Orthographic depth is determined by the degree of correspondence between sounds and the letters that represent them. Deep orthographies such as English or French, in which sound-symbol correspondence is inconsistent, would be harder to learn than more shallow orthographies, such as Spanish or German in which the correspondence is more consistent. As an example, Sun-Alperin and Wang (2008) observed that young native Spanish students' English spelling errors were influenced by their Spanish orthography.

Error analysis of spelling in languages with different orthographic depths has been the subject of a small number of studies (see San Francisco et al., 2006; Sun-Alperin & Wang, 2008; Wang & Geva, 2003). This type of analysis can help identify areas needing remediation in instruction. It can signal individual disabilities that could negatively affect a child's ability to read. Error analysis of spelling in languages with different orthographic depths in contexts where children are learning two languages can also provide insight into transfer and into how orthographic knowledge or knowledge about spelling in one language might be used in another language. This type of analysis can be used in a context of studying the concurrent development of spelling skills in two languages.

The purpose of the study reported on in this paper was to analyze the errors made in spelling in the context of the concurrent development of spelling skills in a context of second-language learning. The context for the inquiry was grade 1 French Immersion with children whose first language was English. French Immersion (FI) is a second language program in which French is the "language of instruction for teaching of other subjects as well as French Language Arts during the entire... or significant portion" of the day (MacFarlane, 2005, p.3). The study compared errors between languages and over time. The study's research questions were as follows:

1. What types of spelling errors do students make in French and English?
2. How do the English spelling errors change from the beginning to the end of grade 1?
3. How do the French spelling errors change from the beginning to the end of grade 1?
4. How do the French and English spelling errors compare at the beginning of grade 1?
5. How do the French and English spelling errors compare at the end of grade 1?

A review of the literature on spelling development

First language spelling development

Various researchers have used stage theory to investigate first-language spelling development in children (e.g., Ehri, 1986; Frith, 1985; Templeton & Bear, 1992). According to stage theory, children begin spelling with minimal knowledge of the alphabet. The mastery of the letters of the alphabet provides a strong foundation for learning to read and spell (Adams, 1990). As children learn the alphabet, they learn how to represent some sounds of words with letters but not all of them.

Some authors argue that spelling development is more complex than stage theory suggests and that children, from the beginning of their contact with print, rely on multiple strategies and many types of knowledge when they spell (Kemp, 2006; Senechal, 2000; Senechal, Basque & Leclaire, 2006; Treiman, 1993; Treiman & Bourassa, 2000; Treiman & Cassar, 1997). As their spelling skills progress, children learn about patterns of letters in words or orthographic knowledge. They begin to use morphological knowledge or knowledge about the structure of words (e.g., dirt/dirty; farm/farmer are related) and strategies such as visual checking (Ehri, 2000). However, Treiman (1993) found that grade one children were not yet aware of morphology and consistently misspelled inflected words such as “helped” as “helpt”. Sprenger-Charolles and Casalis (1995) also noted that the development of correct spelling for one word may occur at a different rate than the correct spelling of another word. They found that this development depended on factors such as environmental exposure and the difficulty of the type or sequence of letters used in a word.

Phonological awareness also plays an important role in spelling development (Bruck & Treiman, 1990; Treiman, 1993; Vellutino, Fletcher, Snowling & Scanlon, 2004). Despite the irregularities of the pronunciation of some phonemes (units of sound), children appear to quickly learn and use their phonological knowledge to assist in their spelling of words (Varnhagen, 1995). Many beginning spellers use a letter-name strategy (“b” for “bee”) to spell a word (Read, 1971; Treiman & Bourassa, 2000). By grade one, most students can break a word into its onset and rime or syllables but may experience some problems breaking words into their individual phonemes (Treiman, 1993).

Other researchers have observed that students encounter most difficulty with vowels and separating consonants blends into their constituents (see Read, 1971; Treiman, 1985; Varnhagen, Boechler, & Steffler, 1999). Treiman (1993) found a number of other common errors among beginning spellers. These include omission of a letter, addition of a letter, reversals of the letter order of a word (e.g., her= hre) and the substitution of correct letters in a word for incorrect letters (e.g., cat=cit). Another common error is the incorrect use of the final “e” and other final letters (e.g., cat=cate). Treiman suggested

that this latter type of error was due to exposure to these types of patterns in printed words or an exaggerated sounding-out process.

Second language spelling development

Some research indicates that phonological knowledge plays an important role in learning how to spell in a second language (e.g., Fashola et al., 1996; Geva, Yaghoub-Zadeh & Schuster, 2000). However, the orthographic depth and the similarity of the languages being studied greatly impacts how easily (and whether or not) information is transferred from one language to the other (Arab-Moghaddam & Senechal, 2001; Davis, Carlisle & Beeman, 1999; Liow & Poon, 1998; Verhoeven, 1990). For example, German children encounter less difficulty in learning to spell vowels than do English children, due to the shallow orthography of their language (Wimmer & Landerl, 1997).

St. Pierre, Laing and Morton (1995) and others (Fashola et al., 1996; Sun-Alperin and Wang, 2008; Wang and Geva, 2003) have observed negative transfer in spelling. St. Pierre et al. studied a group of grade three FI students and found their use of knowledge of the French orthography negatively impacted their spelling of English words. Geva, Wade-Woolley and Shany (1993) and Wade-Woolley and Siegel (1997) found that whether English speaking children were learning Hebrew as a second language or whether it was English as an second language or native speakers of English, similar spelling development patterns were demonstrated in their respective first and second languages.

Geva et al. (1993) also found that students did not develop accurate spelling of all Hebrew words at the same rate. Development of the correct spelling of a word was dependent on the complexity of the spelling pattern to be learned. Cormier and Kelson (2000) demonstrated that the spelling of plurals in French than in English. Cormier, Landry, Jalbert, Caron and Hache (1999) also observed the importance of morpho-syntactic awareness for young FI children and native French children when attempting to spell words with unarticulated (silent) morphemes (e.g., chiens).

Although first and second language spelling may develop in a similar pattern, it appears that certain error types may be due to differences in the nature of the orthography. Previous studies have focused on specific types of spelling errors such as vowels or voicedness (e.g., “s” in pleasure) (Ferrolli & Shanahan, 1993; Sun-Alperin & Wang, 2008) and on languages other than French or English as the first language (e.g., Fashola et al., 1996; James & Klein, 1994; Wang & Geva, 2003; Zutell & Allen, 1988), the study reported on in this paper analyzed the types of first and second language spelling errors at the beginning and end of the grade 1 school year in order to investigate how the spelling of words develops in a context of the concurrent development of spelling skills in two languages with deep orthographies.

Method

Participants

The study's participants were 47 six and seven year old students who were drawn from three classes of grade one FI students an urban and suburban school in the Canadian province of Newfoundland and Labrador. Only children whose parents consented to their participation, whose first language was English and who had no formal instruction in the first or second language prior to kindergarten were included. The participating students were not instructed directly in French or English at home. They were read to in French or English on a regular basis. As well, some children were exposed to French through a sibling in FI, a relative with some French background or French television.

In this province, English Language Arts is not formally introduced to FI students until grade three. The only subjects taught in English in kindergarten and grade one are Physical Education and Music. In grade three, one hour of formal English instruction per day is introduced with the hours of instruction increasing every year thereafter. The majority of children who enter grade one FI cannot speak in French. Once letters and sounds are reviewed, emphasis is placed on building children's oral language skills through song, games and poetry. Oral language skill building is linked with writing such that the vocabulary children learn is being used in their writing.

Instruments

Spelling task. The students' first and second language spelling skills were tested in October (T1) and May (T2) using the spelling subtest of the Wide Range Achievement Test-Revised (WRAT-R) (Jastak & Jastak, 1984) and the Canadian French Individual Achievement Test (FIAT) (Wormeli & Ardanaz, 1987). Students were read a word. A sentence was read with the word in it, the word was repeated again and then students were asked to print the word. The testing followed the same format as the FIAT spelling subtest.

Procedures

The study relied on a repeated measures design using 2-tailed paired sample *t*-tests at the beginning and end of the school year (Gravetter & Wallnau, 2004). This design allowed for the examination of the same group of students at two different times. The spelling tasks were administered by the classroom teacher and/or two graduate students in a group setting. To ensure comprehension of the task, directions were read to students in English with one or two examples of each task reviewed with the group before testing.

English spelling task. Students were asked to spell a number of words. Spelling continued until all students had reached a ceiling of at least 10 consecutive errors on the spelling words. Some students reached a ceiling earlier than others but testing continued until it was clear that the ceiling had been reached by all students. Spelling scores were totaled and then converted into a percentage score out of 40.

French spelling task. French testing followed the same format as English testing. Students' spelling scores were totaled separately and then converted into percentage scores out of 55 items.

Analyses

Spelling errors made during the English and French spelling tasks were categorized based on the types of errors made. These error types were then organized into error categories commonly found in the literature (e.g., vowels, see Treiman, 1985, 1993). Errors could be scored in more than one category in this system. Reliability of this scoring system was checked by using two independent scorers. Descriptive statistics (mean, standard deviation) as well as 2-tailed paired sample *t*-tests were used to compare student errors. Due to the large number of paired sample *t*-tests that were required, a *p*-value of .001 was used.

Results

What types of spelling errors do students make when spelling in French and English?

Table 1 presents the types of errors in spelling. Analysis revealed five main types of errors: primitive, consonant, vowel, transfer and other.

Table 1. *Types of spelling errors (examples are in parentheses)*

<i>Primitive errors</i>	-visual letter confusion (b/d, q/p) -random letters (make=l) -multiple representation of the first phoneme or letter of a word (ll,kk)
<i>Consonant errors</i>	-phonetic letter confusion (f/v, d/t) -silent consonant attempted (bas=bac) -silent consonant omitted (bas=ba) -consonant omission (make=ma) -related consonant substitution (reash=reach) -homophone letter confusion (sa=ca)
<i>Vowel errors</i>	-silent vowel attempted (maik=make) -silent part of vowel omitted (mak=make) -vowel omission (mk=make) -related vowel substitution (mok=make)
<i>Transfer</i>	-homophone transfer (jupe=gupe, lui=lwe)
<i>Other</i>	-over-pronunciation (ine=in, hime=him) -intrusions (make=manke) -reversal of phonemes in words (bannae=banana, ni= in) -incomplete orthographic representation (blanche=blance) -spelling by analogy (chatleur=chaleur) -same language homophone (dans=dent)

How do the English spelling errors change from the beginning to the end of grade 1?

Table 2 presents a comparison of types of errors made in English spelling from the beginning (T1) to the end (T2) of grade 1. Mean, standard

deviation as well as 2-tailed paired sample *t*-tests were used to compare student errors. Vowel and consonant omissions and omission of the silent part of vowel spelling errors decreased. However, attempts at silent vowels, vowel substitution, over-pronunciation errors increased. Students' mean errors in each error category did not consistently decrease over time. In fact, students' errors in some categories increased significantly. However, silent vowel omissions consonant omissions, and vowel omissions decreased significantly in English from T1 to T2.

Table 2. Change in spelling errors made in English at T1 and T2.

Error Type	T1		T2		<i>t</i> (46)
	<i>M</i>	SD	<i>M</i>	SD	
<i>Primitive</i>					
Visual	.02	.15	.02	.15	.00
Multiple Rep.	.57	.83	.30	.75	2.46
Random	.00	.00	.00	.00	
<i>Consonants</i>					
Phonetic Confusion	.60	.85	.45	.58	1.27
Silent Attempted	.00	.00	.00	.00	
Silent Omitted	.00	.00	.00	.00	
Consonant Omitted	5.00	2.42	2.87	2.05	6.71***
Related Con Sub.	.02	.15	.04	.20	-.57
Homo Let. Confus	1.64	.87	1.55	.83	.50
<i>Vowels</i>					
Silent Attempted	.17	.48	.85	.83	-5.76***
Silent Part Omitted	2.85	1.20	1.94	1.11	4.22***
Vowel Omitted	5.23	1.91	2.72	1.85	7.54***
Related Vow. Sub	1.81	1.28	2.87	1.64	-3.53***
<i>Transfer</i>					
Homo Transfer	.02	.15	.00	.00	1.00
<i>Other</i>					
Over-Pronun.	.19	.45	.83	.79	-.34***
Intrusions	2.79	2.90	3.70	2.61	-2.14
Reversal of Phoneme	.04	.20	.00	.00	1.43
Incomplete Ortho.	.26	.57	.53	.80	-1.87
Spell by Analogy	.09	.28	.23	.43	-2.00
Same Lang. Homo	.00	.00	.02	.15	-1.00

Note 1. *** $p \leq .001$

Note 2. Visual= visual letter confusion; Multiple Rep= multiple representations of the first phoneme or letter of a word; Random= random letters; Related Con Sub= related consonant substitution; Homo Let Confus= homophone letter confusion; silent part omitted= silent part of vowel omitted; Related Vow Sub= related vowel substitution; Homo Transfer= homophone transfer from English to French; Over-Pronun= over-pronunciation; Incomplete Ortho= incomplete orthographic representation; Same Lang Homo= same language homophone.

How do the French spelling errors change from the beginning to the end of grade 1?

Table 3 presents a comparison of the types of errors made in French spelling from the beginning (T1) to the end (T2) of grade 1. Over time, some types of errors decreased while others increased. In particular, vowel omissions decreased. French over-pronunciation errors, attempts at silent

vowels, vowel substitution, intrusions and incomplete orthographic representation errors increased significantly.

Table 3. Change in spelling errors made in French at T1 and T2

Error Type	T1		T2		<i>t</i> (46)
	<i>M</i>	SD	<i>M</i>	SD	
<i>Primitive</i>					
Visual	.11	.38	.34	.67	-2.12
Multiple Rep.	.81	1.39	.38	1.05	2.09
Random	.00	.00	.00	.00	
<i>Consonants</i>					
Phonetic Confusion	.13	.34	.17	.56	-.42
Silent Attempted	.04	.20	.02	.15	.57
Silent Omitted	.43	.54	.38	.53	.42
Consonant Omitted	3.79	1.93	3.17	2.37	1.54
Related Con Sub.	.06	.25	.21	.59	-1.73
Homo Let. Confus	0.81	.68	1.57	.65	1.60
<i>Vowels</i>					
Silent Attempted	.00	.00	.55	.75	4.68***
Silent Part Omitted	4.77	1.95	4.51	2.01	.62
Vowel Omitted	4.57	2.39	3.04	2.66	3.30**
Related Vow. Sub	.79	1.18	2.74	1.42	7.30***
<i>Transfer</i>					
Homo Transfer	.57	.72	.66	.94	-.53
<i>Other</i>					
Over-Pronun.	.09	.28	.53	.62	4.47***
Intrusions	2.26	2.16	4.02	2.78	3.90***
Reversal of Phoneme	.19	1.17	.00	.00	1.12
Incomplete Ortho.	.02	.15	.66	.89	-4.76***
Spell by Analogy	.60	.74	.87	.99	-1.57
Same Lang. Homo	.13	.34	.23	.48	1.40

Note. *** $p \leq .001$, ** $p \leq .01$

How do the English and French spelling errors compare at the beginning of grade 1?

Table 4 shows that some spelling errors were more common in one language than in the other at T1. At T1, omission of silent consonant, attempts at a silent part of a vowel, transfer, and spelling by analogy errors were significantly more common in French than English. Phonetic letter confusion, consonant omission, homophone letter confusion incomplete orthographic representation and vowel substitution errors proved to be significantly more common in English.

Table 4. Comparison of spelling errors between languages at T1.

Error Type	<i>M</i>	T1 SD	<i>M</i>	T2 SD	<i>t</i> (46)
<i>Primitive</i>					
Visual	.02	.15	.11	.38	1.43
Multiple Rep.	.57	.83	.81	1.39	1.13
Random	.00	.00	.00	.00	
<i>Consonants</i>					
Phonetic Confusion	.60	.85	.13	.34	3.29**
Silent Attempted	.00	.00	.04	.20	1.43
Silent Omitted	5.00	.00	.43	.54	5.39***
Consonant Omitted	5.00	2.42	3.79	1.93	3.28**
Related Con Sub.	.02	.15	.06	.25	-1.00
Homo Let. Confus	1.64	.87	.81	.68	5.22***
<i>Vowels</i>					
Silent Attempted	.17	.48	.00	.00	2.43
Silent Part Omitted	2.85	1.20	4.77	1.95	-6.88***
Vowel Omitted	5.23	1.91	4.57	2.39	1.99
Related Vow. Sub	1.81	1.28	.79	1.18	4.35***
<i>Transfer</i>					
Homo Transfer	.02	.15	.57	.72	-5.53***
<i>Other</i>					
Over-Pronun.	.19	.45	.09	.28	1.30
Intrusions	2.79	2.90	2.26	2.16	1.58
Reversal of Phoneme	.04	.20	.19	1.17	-.87
Incomplete Ortho.	.26	.57	.02	.15	2.69**
Spell by Analogy	.09	.28	.60	.74	4.51***
Same Lang. Homo	.00	.00	.13	.34	-2.60

Note. *** $p \leq .001$, ** $p \leq .01$

How do the English and French spelling errors compare at the end of grade 1?

Table 5 shows that students' errors at T2 differed with some errors more evident in one language than in the other. At T2, homophone letter confusion errors occurred significantly more often in English. A number of errors occurred significantly more often in French than in English. Visual letter confusion, silent consonant omission, silent vowel omissions, transfer, same language homophone and spelling by analogy errors occurred significantly more often in French. While students made some similar errors in both languages at T1 and T2, there were differences in the type and frequency of errors made depending on the language and time-frame examined.

Table 5. Comparisons of spelling errors between languages at T2.

Error Type	T1		T2		<i>t</i> (46)
	<i>M</i>	SD	<i>M</i>	SD	
<i>Primitive</i>					
Visual	.02	.15	.34	.67	3.15**
Multiple Rep.	.30	.75	.38	1.05	-.63
Random	.00	.00	.00	.00	
<i>Consonants</i>					
Phonetic Confusion	.45	.58	.17	.56	2.55
Silent Attempted	.00	.00	.02	.15	-1.00
Silent Omitted	.00	.00	.38	.53	4.92***
Consonant Omitted	2.87	2.05	3.17	2.37	-.94
Related Con Sub.	.04	.20	.21	.59	-1.83
Homo Let. Confus	1.55	.83	1.57	.65	5.65***
<i>Vowels</i>					
Silent Attempted	.85	.83	.51	.75	2.69**
Silent Part Omitted	1.94	1.11	4.51	2.01	9.48***
Vowel Omitted	2.72	1.85	3.04	2.66	-.90
Related Vow. Sub	2.87	1.64	2.74	1.42	.51
<i>Transfer</i>					
Homo Transfer	.00	.00	.66	.94	-4.82***
<i>Other</i>					
Over-Pronun.	.83	.79	.53	.62	2.25
Intrusions	3.70	2.61	4.02	2.78	-1.12
Reversal of Phoneme	.00	.00	.00	.00	N/A
Incomplete Ortho.	.53	.80	.66	.89	-.97
Spell by Analogy	.23	.43	.87	.99	3.87***
Same Lang. Homo	.02	.15	.23	.48	3.15**

Note. *** $p \leq .001$, ** $p \leq .01$

Discussion and conclusion

In general, the spelling error analysis results revealed that some errors decreased over time while others increased. These changes occurred in both French and English spelling even though children were not instructed in English. This result suggests that children may transfer what they learn about French orthography in the classroom to English spelling. However, this transfer takes time to master. At T2, as compared to T1, students engaged in more vowel substitutions, over-pronunciation errors, more intrusions and incomplete orthographic representations and finally, made more errors in their attempts at including the silent part of a vowel. By the end of the year, students' orthographic knowledge had increased and they were able to apply some of the rules they had learned. However, they were uncertain and inconsistent in the application of this knowledge. For example, while students' omissions of silent vowels decreased from T1 to T2, their silent vowel attempts increased from T1 to T2. They understood that a silent vowel

was needed in a spelling word but were uncertain about how to use this rule. The fact that English spelling skill errors are changing despite lack of instruction suggests that there may be some transfer of skills from French to English. The use of English spelling in the spelling of some French words also suggests there may be transfer from English to French. These results are similar to that of Wang and Geva (2003) and Geva et al. (1993).

Ehri's (1986) stages of spelling development may help explain some of the results of this study. Students made more basic errors such as consonant omissions at the beginning of the year. By the end of the year their approximations to the correct spelling had improved but errors were more complex. They engaged in more attempts at silent vowels and vowel substitutions as their approximations to the correct spelling improved. Treiman and Bourassa (2000) suggest that these stages do not fully capture spelling development. They argued that it is critical to consider the multiple spelling strategies children use. For these children, their strategy use became more complex as their orthographic knowledge increased. For example, children used a first language analogy to spell the second language word "lui" as "lwe". Goswami (1988) and Sprenger-Charolles and Casalis (1995) also found that children used more complex strategies such as analogies or familiar words to help spell unfamiliar words.

The increase in intrusion errors (e.g., bas=baas) in French may be due, not only to lack of exposure, but to students' lack of mastery of orthographic rules and sound-symbol correspondence rules. At this stage in their spelling development, students were being introduced to many new words and rules. As a result, they may not have been able to accurately or consistently apply the acquired knowledge. For example, "carte" was spelled as "cardte", which may indicate that students knew that a "d" or "t" sound or both was at the end of the word.

As was found in other studies (e.g., Ehri, 1986; Treiman, 1993; Varnhagen et al., 1999), vowels were more problematic for students than consonants. This increase in some vowel errors from T1 to T2 in both French and English may be attributed to students' lack of mastery and more awareness and confusion about possible ways to spell a vowel sound. Over-pronunciation (in= ine/ina; lave=lavea) errors also occurred more frequently in French and English at the end of the year. Treiman (1993) suggested this type of error was due to a lack of exposure to print or an exaggerated sounding-out process.

Incomplete orthographic representations (blanche=blance) errors increased in French. Students were not always aware of how to represent the consonant blend. Treiman (1985) and other researchers have noted that the separation of consonant blends into their constituents is difficult for young students.

While students displayed an increase in a number of errors in both French and English, there were more error types noted in French at the end

of the year. This increase in additional types of errors in French may be attributed to the types of words used in the spelling task or the fact that students are acquiring more knowledge in French, the language of instruction, and were trying to apply that knowledge. Vowel omission errors decreased by the end of the year in French and English. However, consonant omissions and omission of the silent part of the vowel errors were also significantly reduced in English. It is possible that students' knowledge of the rules of language was increasing and they were able to apply this knowledge to their spelling.

When comparing the types of errors made in French and English, a number of observations can be made. Regardless of the time of year, students made significantly more errors with silent vowels and silent consonants, transfer and spelling by analogy errors in French than in English. The higher incidence of silent phonological element errors in French than English may be attributed to the French orthography where many were unarticulated or silent vowels. These findings support Senechal's (1999) and Cormier et al.'s (1999) results which suggested that students have more difficulty with a word's unarticulated letters than with articulated letters.

The increased occurrence of homophone transfer from English to French (e.g., j=g; lui=lwe) and spelling by analogy (e.g., chaleur = chatleur) errors in French may be attributed to students' minimal spelling knowledge in French and their reliance on the English orthography when they are uncertain of a spelling. Students transfer or apply their knowledge of the English orthography to assist them in spelling French words. So, as these children progress through grade one, they are transferring knowledge from French to English and from English to French. While these grade one FI students tended to rely on English letters to represent French sounds, St. Pierre et al. (1995) found the opposite results in their study of grade three FI students. Further research is needed to better understand if this discrepancy might have been due to the age of the students and/or differences in methodology. Visual letter confusion (e.g.; b/d; p/q) and same language homophone (e.g.; dans=dent) errors also occurred more frequently at the end of the year in French. Visual letter confusion is normal for children in grade one and the homophone errors were likely due to the words used in the spelling task.

When comparing the error types that were more pronounced in English than French, a different pattern develops. In the beginning of the year, it is the more basic error types such as phonetic letter confusion (e.g., d/t), consonant omissions, together with errors such as homophone letter confusion (e.g., c=s, c=k), vowel substitution and incomplete orthographic representation errors which are more pronounced in English. The increased occurrence of these errors in English over French may be attributed to the particular words used in the spelling task and the differences between the two orthographies. It is also possible that the higher incidence of these basic errors may be due to a lack of direct instruction in English. By the end of the year, students' were making more homophone letter confusion (e.g., s=c, c=k)

errors in English than in French. This may be attributed to the particular words used in the spelling task.

In conclusion, the study reported on in this paper provided insight into the concurrent development of spelling skills in French and English which both have deep orthographies. Results revealed that the type of spelling errors varied depending on the time frame and language being examined. Students' spelling errors displayed variability with some types of errors increasing and others decreasing. In general, regardless of whether French or English spelling error types are considered, students' errors changed over time suggesting a progression of orthographic knowledge. Regardless of the time of year, students encountered more difficulty with silent vowels and consonants errors, transfer and spelling by analogy errors in French than in English. More basic errors such as consonant omission and phonetic letter confusion were more common in English than in French. By the end of the year, homophone letter confusion errors were the only errors occurring more often in English than in French. .

The time-frame and sample size used for this study place limitations on the findings. A number of testing issues also pose limitations. The FIAT, the only French achievement test available at the time of this study, was dated. Task equivalency between the French and English measures may also place limitations on the study as it is very difficult to ascertain assessment instruments that can be controlled on all dimensions (e.g., word length, syllable structure, etc) of equivalency. For example, the spelling of a word in one language may not mirror that of its translation in the other language (e.g., "red" vs "rouge". The categorization of spelling errors on the spelling task also posed some problems. When an error was made the examiner had to interpret what the student was attempting to do when the error was made. For example, when a student spelled "him" as "hime", the examiner needed to decide if this was an attempt at a long vowel, or if the students simply thought the word looked better with an "e" at the end.

In terms of implications, this study has provided insight into the specific errors that grade one French as a second language students make at the beginning and end of the year. This information can be used by teachers and educational psychologists to observe student progress and determine if students need closer monitoring or intervention. For example, if a student was still encountering difficulty with basic spelling errors such as vowel omissions at the end of the year, further investigation of that student's progress may be warranted. However, an increase in errors in vowel substitution or over-pronunciation, based on this study, would be expected. As well, knowing that students at this age experience difficulty with these specific areas allows teachers to focus on these error types in the classroom in an effort to provide support for this stage of spelling development. This study also highlighted the differences in the types of errors students make in English and French. Again, knowing what types of errors students make in each language will allow teachers to focus on these areas in their teaching.

Despite the lack of direct instruction in English, these students' English spelling skills were developing. The transfer of knowledge from French to English suggests that young students can learn a second language and transfer some of their skills to learning in their first language.



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