

A COMPARISON OF THE FRENCH AND ENGLISH READING SKILLS
OF GRADE FOUR STUDENTS ENROLLED IN TWO FRENCH
IMMERSION PROGRAMS

by

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A COMPARISON OF THE FRENCH AND ENGLISH READING SKILLS OF GRADE FOUR

STUDENTS ENROLLED IN TWO FRENCH IMMERSION PROGRAMS

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ABSTRACT

This study compared the development and transfer of English and French reading skills as demonstrated by two groups of grade four French immersion students. In the comparison group, the grade four students were enrolled in a lower mainland school district's early immersion program where English language instruction is introduced at grade three. The experimental group consisted of grade four students enrolled in a modified French immersion program in a second school district, also in the lower mainland. In this immersion program, English language arts are delayed to grade four.

The experimental district implemented the delay of English language instruction based on the hypothesis that this would provide immersion students with increased exposure to and practice in the second language. It was further hypothesized that this delay would not be detrimental to the development of these students' English language skills. The purpose of this study was to examine the above hypotheses.

Students' performance on two domain referenced reading comprehension tests (both previously developed for Ministry of Education assessments), one in French and one in English, was analyzed and compared. A random sample of 20 students from each district was then tested individually in order to examine the transfer and interference of reading and spelling skills in the two languages.

No significant difference in English reading comprehension was revealed. However, in French reading comprehension, a significant difference was found favouring the students in the experimental district. These results seem to indicate that the delay of English language arts may be beneficial to students' French language skills, while having no apparent detrimental effect on the development of their English language skills.

Results of the individual testing revealed that the students are successfully transferring their skills acquired in French, to reading and spelling in English, however, some interference between languages was noted. Specific letter/sound combinations which caused difficulty for the students in both groups were identified.

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CHAPTER 1

INTRODUCTION TO THE STUDY

Since the initiation of the experimental pilot program in St. Lambert, Quebec (Lambert & Tucker, 1972) approximately twenty five years ago, the availability and the popularity of French immersion programs has increased dramatically across Canada. In British Columbia alone, the number of students enrolled in such programs has grown from less than 1500 in the 1977/78 school year to well over 20,000 just ten years later (Ministry of Education, Modern Languages Services Branch; 1988).

The immersion program is unique in that the students' second language, French, is used as the medium of instruction. All academic subjects are taught in French in the initial phase of the program. Instruction in the native language (English) is introduced after a few years and the amount of instruction in French is gradually reduced to approximately 50% (the timing of the introduction of English instruction and the percentage of French instruction varies depending on the individual program).

The present study involves students enrolled in early total immersion, which is the most prevalent

variety of French immersion programs offered in British Columbia (other varieties such as early partial, intermediate and late immersion are described in Chapter 2, the Literature Review).

In early total immersion programs, instruction is carried out entirely in French through kindergarten, to grade two. English language arts are usually introduced at grade three and instruction is increased to approximately 50% in the intermediate grades. Students are taught to read initially in French.

Recently, one school board among several initiated an important modification to the French immersion program in its district. English language arts instruction was delayed one year and introduced at grade four. The rationale behind this policy change was that this would allow for increased exposure to French language arts thus helping to improve French language skills, without detrimental effects to the development of English language skills. This hypothesis was originally proposed by McDougall and Bruck (1976). In their study comparing the effects on native language skills of the introduction of English reading at the grade two and grade three levels, McDougall and Bruck

found no significant difference in performance between the two groups despite the discrepancies in the amount of time spent learning to read English. They attributed this lack of difference to an acceleration of the transfer of skills and concluded that delaying English instruction was not detrimental to the development of English reading skills. The researchers further hypothesized that poor readers might benefit from such a delay and that "the longer the delay in introduction of English reading, the better will be the child's grounding in French reading..." (p. 42). McDougall and Bruck noted the need for further research in this area, as French reading performance was not examined in their study.

Although there is no specific empirical evidence to support the above hypotheses, research in general does seem to suggest that it would be beneficial to increase exposure to the French language while decreasing English language arts instruction. Students enrolled in French immersion programs develop equal, or, in some cases better, English language skills when compared to students in the regular English program by the end of grade five regardless of the amount of time

devoted to English instruction (Genesee, 1984; Barik and Swain, 1975; Lambert and Tucker, 1972; Shapson and Day, 1982). Genesee (1979a) also found that, in the intermediate grades, early immersion students experience a plateau or leveling off in their progress in French language skills. He attributes this 'plateau' stage partly to the decrease in time allotted to French instruction (in the intermediate grades in most immersion programs French instruction is reduced to 50%, while English instruction is increased to 50%).

Although the findings presented above seem to support the decision of the experimental district to delay the introduction of English language arts in the immersion program, and although the progress of students in the program has been monitored internally through standardized reading tests, no formal comparison has been carried out to establish the success of this program change. There is a need for further research and evaluation in this area to support the continuation, and the adoption by other districts, of this modification in the French immersion program.

This study examines the hypotheses put forth by McDougall and Bruck, and by Genesee by undertaking a

comparison of the development and transfer of French and English reading skills demonstrated by a group of grade four students enrolled in: a) a French immersion program in one school district where English language arts instruction is introduced at grade three and b) a modified French immersion program in a comparable school district where English instruction is delayed to grade four. It is expected that there will be no significant difference in English reading performance between the two groups, but that, because of the extended exposure to French language instruction, students in the modified program should demonstrate superior French reading skills.

Objectives of the Study

This study will seek to answer the following questions:

1. Is there a significant difference in the English reading achievement of grade four students enrolled in an immersion program where English language instruction is delayed to grade four and comparable students enrolled in a program where English is introduced in grade three?
2. Is there a significant difference in the French reading achievement of grade four students enrolled in a French immersion program where English is introduced in grade four and comparable students enrolled in a program where English language arts are introduced in grade three?
3. Is there a significant difference in the transfer and/or interference of reading skills a) from the native to the second language (i.e. from English to French) or b) from the second language to the native language (i.e. from French to English) demonstrated by the students in these two programs?

4. What recommendations may be made concerning the implementation of the French immersion program in districts where a delay in the introduction of English language instruction has been or may be considered?

The results of this study should provide useful information to those involved with the implementation of, and the policy making within the French immersion program in districts where such a delay in English language arts has been or may be considered.

Thesis Organization

In Chapter 2 of this study, the literature review, the research pertaining to reading in the French immersion program will be presented and discussed. As an introduction, the general results from evaluative studies of French immersion programs will be reviewed. The literature dealing with reading in the native as well as the second language will then be examined followed by a discussion of the effects of the timing and sequencing of the languages of instruction. Two pertinent studies examining the phenomena of transfer and interference of reading skills between languages as demonstrated by students in French immersion programs will also be presented.

In Chapter 3 the methodology of the study is described, beginning with a discussion and comparison of the French immersion programs of the two districts participating in the study. A detailed description is then given of the sampling procedures and the measurement instruments used. The chapter concludes with an outline of the study's research design and the data analysis.

The results of the study are presented in Chapter 4. The scores obtained by the two groups on the French and English reading comprehension tests are compared and discussed. Qualitative analyses of student responses to the Letter and Word Reading tests (LWRT, Mason and McCormick, 1979) are explained, focussing on instances of transfer and/or interference between languages.

In Chapter 5, the results of the study are summarized and discussed in relation to the research questions and literature. Finally, implications for further study and recommendations for implementation of the French immersion program are proposed.

CHAPTER 2

LITERATURE REVIEW

Introduction:

In this chapter, the literature pertaining to reading acquisition in the French immersion program is presented and discussed. First, the most common varieties of French immersion programs in Canada are briefly described. The general tendencies which have emerged from research carried out in immersion programs are outlined and are then compared to findings from other second language programs. Studies comparing the reading performance of students in relation to the sequencing of the languages of instruction and to the timing of the introduction of reading instruction in English are presented. The phenomena of transfer and interference between the native and second language are then examined. To conclude the review of the pertinent literature, two recent studies pertaining to the transfer of reading skills and processes demonstrated by students in French immersion programs are presented in detail.

Description of French immersion programs:

The title "French immersion" has been used to describe a wide variety of second language programs. There are, however, three basic categories of French immersion programs offered in Canada: early total immersion, early partial immersion, and intermediate and late immersion (Cummins, 1983).

In early total immersion programs, instruction is carried out entirely in French through kindergarten, grade one and in most cases, grade two. English language arts are usually introduced at the grade two or three level and instruction in English is increased to approximately 50% in the intermediate grades. Students are taught to read initially in French.

In early partial immersion (or bilingual programs) students are instructed in French only in kindergarten, but through the remaining elementary years, instructional time is divided 50% English, 50% French. Students are taught to read initially in their native language, English.

In intermediate and late immersion, students

begin elementary school in the regular English classroom and then enter an immersion program, most often at the intermediate or junior high school level.

Of these three general categories described, the early total and late immersion programs (with grade six entry) are the most prevalent in British Columbia. The present study involves the testing of students enrolled in early total immersion programs in two separate school districts. Henceforth, the term "French immersion" will be used to refer to these programs.

General Results: Evaluative studies of French
immersion programs

Although the French immersion program represents a relatively recent educational innovation (Lambert & Tucker, 1972), extensive research has been carried out across Canada to evaluate students' performance in both English and French language acquisition, as well as in other academic subject areas. Some tendencies have emerged and results have been generalizable. Students in immersion learn the French language and do

not suffer any cognitive deficiency in English language skills or in any other subject area. Researchers have found that although students in an immersion program experience an initial lag in the development of English language skills (especially spelling skills), once formal English language arts instruction is introduced they catch up quickly and in some cases even surpass students in the traditional English program. These results were obtained mainly through the analysis of standardized tests of language knowledge and reading performance. (e.g. Barik & Swain, 1978; Genesee, 1979b; Lambert & Tucker, 1972; Shapson & Day, 1982)

Research also indicates that, in French, immersion students obtain a general level of competency in receptive language skills (i.e. listening and reading comprehension) that is comparable to the level attained by their francophone peers. Their productive language skills (writing and speaking), however, are somewhat weaker. Although French immersion students acquire a functional level of communication that vastly surpasses the level attained by students in other French as a second

language programs, their performance is typically "not native-like", that is, inferior to that of francophone students. (e.g. Lambert & Tucker, 1972; Swain & Lapkin, 1981; Genesee, 1984)

The general results of these evaluative studies seem to indicate the plausibility of a delay in introduction of English language arts instruction in that students enrolled in the French immersion program catch up so quickly in the development of English skills and might in fact benefit from further exposure to and practice in the second language, French. The possible benefits of increased exposure to the French language are further indicated when specific gaps in the development of French reading skills demonstrated by French immersion students are examined.

French Reading Skills

As mentioned above, students in French immersion generally attain a level of reading achievement comparable to that of their francophone peers. On standardized French language and reading tests (using norms developed for native French speaking pupils in

Quebec) French immersion students typically score from the 24th to the 50th percentiles (Lambert & Tucker, 1972; Barik & Swain, 1978; Swain, 1984). Some studies, however, have identified specific deficits in French reading skills. Tucker (1975), for example, found that a group of grade seven immersion students did not score as high as their francophone peers in reading comprehension and attributed the inferior scores to the students' still limited knowledge of vocabulary.

In his review of the literature pertaining to the acquisition of reading in immersion at different grade levels, Genesee (1979b) found immersion students' development of "discrete-point" skills to be inferior to that of francophone students. Discrete-point skills are defined as knowledge of vocabulary, spelling and grammar.

Other researchers have found that students in immersion programs are not sufficiently sensitive to the syntactic and semantic constraints of the second language, French (Mes-Prat & Edwards, 1981; Cziko, 1978). In his study comparing the reading strategies and oral reading errors of grade seven early

immersion, late immersion, and francophone students, Cziko (1980) found that students with an "intermediate" knowledge of French (late immersion group) tend to rely heavily on the graphic information of the text and rely less on contextual constraints as a source of information (p.111). They employ a more "bottom-up" strategy while native speakers use a more interactive strategy combining both contextual and graphic information. Cziko also found that a group of grade seven early immersion students (classified as advanced in this study) made a significantly higher proportion of errors reflecting interference from English or a lack of knowledge of certain aspects of the French language than a group of francophone students.

In the 1987 British Columbia French Immersion Assessment (Day & Shapson, 1988), domain referenced French reading comprehension tests were administered to the grade four and seven immersion students in this province. At both grade levels tested, of the four domains (Literal Comprehension, Inferential/Critical Comprehension, Vocabulary, and Graphic Materials), students' mean performance was weakest in the

Vocabulary and Inferential/Critical Comprehension domains. Items in the Vocabulary domain measured the students' ability to recognize familiar words or expressions, and to determine the meaning of unfamiliar words from the context.

Inferential/Critical Comprehension domain items measured the students' ability to infer and understand main ideas, to make generalizations and understand the author's purpose.

It seems logical that, because they are not native French speakers and have not been exposed to the French language for the same length of time as their francophone peers, students in French immersion programs demonstrate some relative weaknesses in French language development in general and, therefore, in reading skills. A restricted vocabulary and limited knowledge of the semantics and syntax of the second language would necessarily result in limited reading comprehension. Although the extent of the effects of language development on the acquisition of reading skills is not fully understood, most reading specialists agree that it is an important factor.

Psycholinguists such as Goodman (1970) and

Smith (1971) emphasize the interaction of language, thought, and reading. Goodman (1979) describes the reading process as a "psycholinguistic guessing game" and explains its interactive nature as follows:

...tentative information processing, guessing on the basis of minimal actual information is the primary characteristic of reading. The reader interacts with an author through a text to construct meaning. That means that there is interaction between thought and language. (p.657)

Thus, the more knowledge of a language acquired by the reader, the better able he is to use contextual cues to predict, or "guess", the meaning of a text.

Researchers specializing in bilingual education also point out the importance of the effect of language development on reading skills (Feeley, 1983; Kaminsky, 1976). Kaminsky (1976), for example, defines reading as a second-order language skill. She explains that the reader must be able to use his/her

knowledge of the language in order to make decisions concerning the visual symbols. The more one masters the language, that is, the more one is familiar with the vocabulary and the structures of the language, the better the probability that one's predictions will be correct. Because immersion students do not attain the same level of linguistic competence in French as native speakers, it follows that their reading skills will not be as well developed as those of their francophone peers.

Although the influence of linguistic competence on reading development, and the apparent disadvantage of learning to read in a second language are acknowledged by specialists in bilingual education, there are other important factors that effect learning to read in a second language. Factors such as the social status of the native and second languages (that is, the distinction between the majority and minority language learner); the transfer of skills between the native and second languages; the level of intelligence of the reader; and the level of success in reading attained in the native language; all seem to influence the development of reading skills in a

second language (Connor, 1983; Cummins, 1979; Hudson, 1982; Shapson, 1984). However, the degree to which these factors effect the acquisition of reading skills is not fully understood. The distinction between majority and minority languages, and the transfer of skills between languages will be discussed in more detail later in this chapter.

The literature presented above pertaining to reading in a second language, and the studies identifying the specific weaknesses in reading skills of French immersion students seem to indicate the potential benefit to students of an increase in exposure to the French language. Studies comparing the effects of timing and sequencing of languages of instruction in the French immersion program also suggest that it is preferable to introduce English language arts instruction after the students have had ample opportunity to learn and practice the fundamental skills in the second language, i.e. French.

Timing and sequencing of languages of instruction

When the French immersion program was first introduced in St. Lambert, Quebec, all instruction was carried out in French through kindergarten and grade one. English language arts instruction was introduced at grade two. Because students first learned the basic skills of reading and writing in their second language, French, some parents and educators expressed concerns regarding the possible negative effects on the development of English language skills.

Variations of the program - where English language arts instruction was introduced earlier (simultaneously with or before French language arts instruction) - were adopted by some individual school boards. In other school districts, the introduction of English language arts instruction was delayed to grade three. Several comparative studies have been carried out to evaluate the effects of the timing and sequencing of languages of instruction on students' performance in English (Swain, 1974; McDougall & Bruck, 1976; Cziko, 1976; Swain & Lapkin, 1981). Researchers consistently found no evidence to support

the initial concerns regarding the French immersion students' development of English reading and writing skills, and in fact found the opposite. The introduction of English language instruction at the grade two level as opposed to the grade three level did not produce advantageous effects on English reading performance (McDougall & Bruck, 1976). Similarly, Cziko (1976) found no difference in English reading competence between students enrolled in an early immersion program and students in a middle immersion program (where students follow a conventional English program until grade four, when immersion begins and instruction is done entirely in French). Even though the students in the middle immersion program received three more years of formal English instruction than did the students in the early immersion program, these two groups attained the same level of reading competence in their native language when tested at the end of grade four. In addition, the students in the middle immersion program received significantly inferior results on a reading comprehension test in French when compared to their francophone peers (whereas students in early immersion

attained results comparable to those of the francophone students).

Two further studies comparing the reading performance of students in early immersion to that of students in a partial immersion (or 50/50) program seem to refute the argument that it is preferable to introduce English language arts instruction as early as possible (Swain, 1974; Barik, Swain, Nwanunoli, 1977 cited in Swain, 1984). The simultaneous instruction of reading in English and in French, as is the case in partial immersion where instruction is divided equally between the two languages from grade one; seemed to produce negative effects on the students' reading achievement in the second as well as the native language. Swain suggests that when reading is taught in the two languages simultaneously, the interfering and competing linguistic traits cause confusion, and that students require a period of time to resolve this confusion. In the partial immersion program a negative interference between the two languages, French and English, was noted, while in early immersion there seems to be a positive transfer of reading skills from the second to the native language.

To summarize, in his article reviewing the results of evaluative studies carried out in French immersion programs and alternative programs (such as partial immersion) Genesee (1984) presents the following conclusions:

There does not appear to be any advantage to English language development from delaying or reducing the use of French as a medium of instruction.

With respect to French language skills, however, he concludes that:

Delaying or reducing the use of French as a medium of instruction appears to yield lower levels of competence in French.

(p. 50-51)

The positive transfer of skills: Why is the French immersion program successful?

The success of the French immersion program; the positive transfer of skills (specifically reading skills) that occurs in the program, seems to contradict the arguments of experts in bilingual education who support the introduction of reading first in the native language (Modiano cited in Shapson & Purbhoo, 1974; Thonis, 1981; Kupinsky, 1983). These specialists contend that learning to read is easier in the native language because it involves one unique skill (associating written symbols to sounds already known) while learning to read in a second language requires, in addition, the skills of learning new sounds, words and meanings.

Three main features of the French immersion program are presented in the literature dealing with reading and bilingual education in explanation of this apparent contradiction. Both the nature of the languages involved, as well as the students enrolled in the program, distinguish French immersion from other bilingual programs.

Genesee (1979b) distinguishes between languages of high-prestige and low-prestige. He explains that students in immersion programs represent the majority group in Canada. Their native language, English, being the dominant language, is highly regarded in the home and in the community. It is a language of high-prestige. Being schooled in the second language poses no threat to the development of the native language. Therefore, the transfer of reading skills occurs easily between the second or school language and the native language. In contrast, the students in other bilingual programs represent minority groups (for example, Mexican students in the United States). Their native language is not dominant and is not highly valued in the community. In this case, the transfer of reading skills from the second language (English) to the native language (Spanish) is not encouraged. These students learn to reject their native language and culture (Shapson, 1984). For these minority groups, initial instruction in the second language, English, produces negative effects on the maintenance of the native language as well as on the acquisition of skills in the second language.

For this reason, for minority children, bilingual education specialists support the introduction of reading instruction initially in the native language, then in the second language.

Cowan and Sarmed (1976) offer a second explanation for the "unusual" success of French immersion programs. They suggest that students in immersion are able to transfer reading skills from the second language, French, to the native language, English, because of the similarity of the two languages. They did not find the same positive results in an English immersion program for Persian students. English and Persian differ a great deal in their syntactic and orthographic systems and also in directionality (Persian is read from right to left). Therefore, the transfer of reading skills does not occur as easily between the two languages as between English and French which are more similar.

Swain (1974) proposes a third hypothesis to explain the success of the transfer of reading skills in immersion programs. She argues that it is easier to learn to read initially in French because the system of sound-symbol correspondence is more regular

in French than in English. French is described as a one to many sound-symbol correspondence system; one sound may be represented by many groups of letters (eg. /o/ may appear as 'eau', 'au', 'ot' etc.) however, one group of letters is, as a rule, pronounced in a consistent way (eg. the letter combination 'eau' is pronounced as /o/). English is described as a many to many sound-symbol correspondence system; a sound may be represented by many different combinations of letters (eg. /o/ may appear as 'ow', 'ough', 'oa' etc.) and a group of letters may also represent many sounds (eg. there are different possible pronunciations for the group 'ough'). Swain contends that because French is a more regular, predictable language, it is easier to learn to read first in French than in English. She adds that reading skills may be more easily transferred to the native language rather than to the second language because the sounds, vocabulary and structures of the native language are already well established.

Although students in other bilingual programs may benefit from learning to read in their native

language before instruction is introduced in the second language, this does not seem to be the case for students in French immersion programs in Canada. Students in early immersion learn to read initially in French and then successfully transfer their reading skills to their native language, English.

The phenomena of transfer and interference between languages:

It is generally accepted that students in early immersion programs acquire skills through learning to read in the second language, French, which can be quickly and easily transferred to the native language once instruction in English has been introduced. Little is known, however, about the process of transfer or about the specific skills which are transferred from one language to another. Research in this area is limited, but two recent studies have provided important information related to the phenomenon of transfer: a study by Malicky, Fagan & Norman (1988) comparing the reading processes of

French immersion children reading in French and in English, and a longitudinal study carried out by Kendall, LaJeunesse, Chmilar, Rauch Shapson & Shapson (1987) examining the specific instances of transfer and interference occurring between the two languages.

Malicky et al. compared the reading processes of grade one and two children reading in French and in English through the analysis of miscues and unaided retellings. Reading processes are defined as cognitive actions or changes that may occur during the reading of a text (such as analysing, predicting, and synthesizing). When examining reading processes, the focus is on what the reader is doing while reading, i.e. how a reader identifies words and constructs meaning. The cognitive actions that take place during reading are not directly observable, but some reading specialists believe that they may be inferred from the observed behavior of readers (Goodman, 1970; Goodman and Burke, 1972). In this way, the analysis of miscues made by a reader during the oral reading of a text is thought to provide "a window into the reading process" (Goodman & Burke, 1972, p.15).

In the Malicky et al. study, students read orally, retold and answered a series of comprehension questions related to passages in French and in English. As was expected, the researchers found the students' reading performance in French to be superior to their performance in English, although, by grade two their reading skills in English improved a great deal.

Malicky et al. suggest that one possible explanation for this increase in English reading skills may be that:

...once children have learned to read in one language, they learn to read in another much more rapidly because of the similarity of reading processes in both languages.

(p. 7).

Further, they found only two significant differences in reading processes used on French and English passages. The children in this study made significantly more miscues involving a change in the author's meaning while reading French passages as

compared to English. As a result, they also produced more erroneous information in their retelling of French texts than of English. But, in all other categories students performed similarly: that is, they were equally able to use graphic cues, and language and background knowledge as they read in both languages; and were able to recall text-based and knowledge-based information similarly across languages.

Malicky et al. contend that the results of their study support Genesee's hypothesis that there are basic reading processes which, once acquired, can be applied (or transferred) to reading another language. They conclude, supporting Genesee's notion that transfer seems to involve "cognitive processes, such as the use of one's knowledge of the syntactic transitional probabilities of a language" (Genesee, 1979b, p.75).

The Malicky et al. study seems to indicate that students in French immersion acquire reading processes while learning to read in French that can be effectively transferred to the reading of English texts. The focus of their study was on the basic

processes of reading rather than on the specific reading skills that are transferred or cause interference between two languages. Another major longitudinal study, carried out by Kendall et al. (1987), focussed on and revealed valuable information about the specific skills involved in the phenomenon of transfer.

The purpose of the Kendall et al. study was to examine the development of graphophonic and word knowledge of individual students in a French immersion program. A group of students (52 in Kindergarten, 46 in grade one, 44 in grade two) were followed from the beginning of Kindergarten to the end of grade two. The researchers administered two tests: Mason & McCormick's Letter and Word Reading Test (LWRT, 1979) and an oral reading and comprehension test (ORC) from the Standard Reading Inventory (McCracken, 1966).

Quantitative and qualitative data were collected and compared to the results obtained from a comparison group of students in the regular English program. By analyzing the errors made by the French immersion students, the researchers identified the elements of

French reading skills that can be readily transferred to English, and the elements that interfere with learning to read in English.

Kendall et al. found that, even in grade one, the students easily transferred from French to English many sounds or combinations of sounds such as : simple consonants, the vowel sounds A and U, and vowel combinations such as OU, OR. On the other hand, some elements seemed to cause interference in reading in English: consonants and digraphs such as TH, CH, R, J, and vowel sounds such as I , U, and Y.

In grade two the proportion of errors that could be attributed to interference from French decoding dropped significantly. On the Reading Common Words subtest of the LWRT, approximately 25% of the errors made by the grade one French immersion students were due to their application of French decoding skills. In grade two only one error could be attributed to interference between languages. The grade two immersion students were more adept at using their graphophonic skills and at differentiating between reading in French and in English.

Errors other than those resulting from

interference were attributed to lack of practice and/or instruction (eg. consonant blends such as SPL and silent initial consonants such as KN, WR).

On the Spelling Common Words subtests of the LWRT, grade one and two immersion students experienced difficulty with the final silent E (this is understandable since the silent E rule in English differs from that in French).

In the ORC test, although several grade two students were not able to read further than the primer level in English, only two students used French decoding skills. Those students who read the grade one passage or beyond "seemed to be able to use English graphophonic skills, in combination with context, well enough that they could read meaningful English text" (p. 149). These students did not use French decoding skills.

The above results seem to indicate that although some individual elements cause confusion or interference for a relatively small number of the FI students tested, the majority of students are able to distinguish between reading in French and reading in English. Without being formally taught to read in

English, these students seem to be transferring the reading skills they have acquired in French to reading in English. They seem to be able, as early as the grade two level, to apply the appropriate rules of decoding learned in French, along with their background knowledge of the English language to the reading of English texts.

The results of the Kendall et al. study seem to support the contention that the introduction of English language arts instruction could be delayed. Since students in French immersion programs progress quickly in their development of English reading skills without being formally taught to read in English, the early introduction of instruction in English does not seem to be necessary. It has been suggested, however, that this rapid development of English reading skills may result from students being taught to read in their native language at home. Cummins (1977) cautions that the rapid transfer of reading skills observed in immersion programs may be a "function of parental involvement in the reading process" (p.48). He explains that parents of immersion students usually have a strong interest in their children's education and that they consciously try to promote interest

in reading in English because they know that English language arts are not taught in the program until grade three (or four). It is not yet known, however, to what degree parental encouragement produces an effect on the transfer of reading skills between the second and the native language.

Although Kendall et al. found that the parents of French immersion students read more often to their children than did the parents of the students in the traditional English program, this difference could not explain the successful transfer of French skills to reading in English. The researchers in fact found:

...no apparent pattern as to the type of help the parents were giving at home, what the children read at home (i.e. English and/or French books), and the children's English reading performance.
(p.150)

Similar findings were presented in an in-depth study of the English writing and reading skills of twelve French immersion grade one students. Eagan &

Cashion (1988) found that, although these students were not reading in English (i.e. that they were not able to interpret meaning from print) they were showing progress in their reading and writing skills. The parents of these children were not attempting to teach them to read or write in English. There was no clear pattern revealed as to the amount of writing and reading attempted by the children. The researchers did find, however, that the students were interested in learning to read and write in their first language (the students asked many questions about the meaning and the spelling of words), and that they attempted to read a variety of texts (eg. cereal boxes, game show signs, catalogues, cards, letters, signs etc.).

The above findings also support Genesee's explanation of the successful transfer of skills as seen in the immersion program. The students in French immersion programs are motivated to learn to read in their native language, and are surrounded with opportunities to practice their skills. English is prevalent in the community and is a language of high-prestige. The reading skills learned in French are therefore readily transferred to the reading of English.

Summary:

The research carried out in the French immersion program examining the transfer of reading skills between French and English, and the effects of delaying English language arts instruction, is limited. The literature, in general, however, does seem to support the hypothesis that English language instruction may be delayed to allow for increased exposure to French language arts, without detriment to the development of English language skills.

Results of evaluative studies in immersion indicate that after an initial lag in English language skills, French immersion students soon catch up with their peers in the regular English classroom, when English language arts instruction is introduced.

Studies investigating the effects of the timing and sequencing of languages of instruction do not support the simultaneous or early introduction of English language arts. Students enrolled in immersion programs where reading is initially taught in French only until grade three, when English language arts is introduced, attain superior results on French reading

tests, and perform as well, in English, as their peers in other programs (eg. partial immersion, or 50/50 bilingual programs). It seems that increased exposure to French language arts may enhance the development of reading skills in French, while this does not seem to be the case in English.

Researchers examining the phenomenon of transfer have found that there are basic reading processes and specific skills that, once learned in French, are easily transferred to reading in English. Even before students in immersion are being taught to read in English, they are transferring on their own the processes and skills they have acquired in French.

The present study should provide further information regarding the development of reading in the French immersion program; specifically, the transfer of reading skills and the effects of delaying English instruction to grade four.

CHAPTER 3

METHODOLOGY

In this chapter the methodology of the study is described beginning with a description of the sample of students and the French immersion programs of the two school districts involved. A description of the instruments and the procedures followed to administer them are then presented. The research design and data analysis are also described.

Description of Programs and Sample

Immersion Programs:

The grade four French immersion students of two lower mainland school districts; the experimental and a comparison district; participated in the study. The major program differences between the two districts involved exist in the teaching of English language arts.

English language arts:

In the comparison district, English language arts are introduced at grade three for approximately one hour a day (about 20% of total instruction time).

English language arts are taught by specialists (i.e. teachers specializing in the teaching of English language arts to French immersion students) and not by the French immersion classroom teacher. English language arts and French language arts teachers communicated regularly regarding students' progress and programmes. The language arts program taught is specially designed by this district for French immersion students. It is based on a Whole Language Approach (an integrated, literature-based approach to reading and writing) as well as a contrastive method of spelling (where groups of words with letter combinations differing from those in French are presented: e.g. words that end in "ic").

In the experimental district, English language arts are delayed until grade four at which point they are taught for approximately one hour a day (20% of total instruction time). The regular French immersion classroom teacher teaches English language arts to his/her students unless arrangements internal to the school are made. There is no specific English reading program taught, some teachers use the ministry prescribed Ginn 720 reading series; most teachers,

however, implement a Whole Language methodology. Most teachers use the ministry prescribed English spelling text (the Canadian Spelling Program), many present groups of words related to a theme of study (e.g. baseball terms, homophones).

French language arts:

Except for the differences in English language arts instruction, the French immersion programs offered by the two districts are very similar. The French immersion programs in both school districts are housed in dual track schools of rather large populations (from 400 to over 550 students). Teachers in both districts use the two ministry prescribed reading texts, Piloe and la Lecture sous toutes ses formes, supplemented by various other texts, novels and stories. All grade four French immersion teachers in both school districts teach the Writing Process (a program outlining stages of writing such as drafting, editing and publishing developed by the Delta School District). No particular formal French spelling program is taught.

The similarities and differences of the immersion programs offered by the comparison and experimental districts are summarized in Table I.

Table I:

Summary of French immersion programs offered
in experimental and comparison districts.

	Experimental District	Comparison District
French Language Arts:		
Program:	-Ministry prescribed reading texts -Supplementary materials -Writing process -no specific formal spelling program	-same as Experimental district
English Language Arts:		
When introduced:	-Grade 4 (approx. 20%)	-Grade 3 (approx. 20%)
Taught by:	-classroom teacher	-English language arts specialist
Program:	-Ministry prescribed Ginn 720 reading series -Whole lang. approach -Ministry prescribed spelling text -theme related spelling	* -Whole language literature-based reading/writing program * -contrastive spelling program * (both programs developed by comparison district)

Sample:

The comparison school district was chosen because of its similarity to the experimental district in the general socioeconomic (S.E.S.) backgrounds of the students enrolled in the French immersion program. Central office personnel, principals and teachers of both school districts described the students as having varied but largely middle class S.E.S. backgrounds. The students in both programs would be described as majority language children (as defined by Genesee, 1984). Few students from each district spoke a third language or spoke French in the home, none were identified by their classroom teacher as "English as a second language" (ESL) students. A large proportion of French immersion students in each of the three schools in the comparison district, and the two schools in the experimental district live outside of the schools' catchment area and are therefore transported each day by their parents.

The sample for the study consisted of all five classes of grade four early immersion students from three schools in the comparison district and all five

classes from two schools in the experimental district. Classes were straight grade four, or combined grades three/four or four/five. Test scores of all students tested for the French Reading Comprehension Test (in the comparison district: n=106, in the experimental district: n=87) and the Provincial English Reading Assessment Test were analyzed.

In order to examine oral reading skills, a random sample of 20 students was selected from each of the two districts. Table II summarizes the samples involved in each of the districts.

Table II

Sample:

	Comparison District n=	Experimental District n=
Total: Grade 4 Fr. Imm. Population	106	87
Random sample selected for indiv. tests	20	20
# of schools involved	3	2
# of classes involved	5*	5*

* Class configurations were as follows:

Experimental district: one combined grades 3/4,
two straight grade 4,
two combined grades 4/5

Comparison district: one combined grades 3/4
three straight grade 4
one combined grade 4/5

Description of Measurement Instruments

Test de Lecture en Francais (1987)

This multiple-choice, domain-referenced French reading test was developed by the B.C. French Study, Simon Fraser University, for the Ministry of Education as part of the first Provincial assessment of French immersion programs (Day and Shapson, 1988). This test is comprised of eight short texts including fiction, non-fiction, poetry and visual information such as a map and comic strip. The total of 36 multiple-choice questions measure the students' ability in four domains:

1. Vocabulary - items test the students' ability to recognize familiar or high frequency words or expressions and their ability to use context to determine the meaning of unfamiliar or low frequency words or expressions.
2. Literal Comprehension - items measure the students' ability to understand main ideas, relationships and relevant information when explicitly stated in the text.

3. Inferential/Critical Comprehension - items measure the students' ability to infer and understand main ideas and relevant information when not stated directly in the text and to recognize and interpret relationships, make generalizations, and form hypotheses and conclusions.

4. Graphic materials - items test the students' ability to obtain information from a table and a map, and to interpret a cartoon without words.

English Reading Comprehension Test (1988)

This multiple-choice, domain-referenced test was also developed for the Ministry of Education's use during the 1988 Provincial English Reading and Written Expression Assessment (Student Assessment, Ministry of Education, 1988). As in the Test de Lecture, 40 multiple-choice questions measure the students' ability in the domains of Literal Comprehension, Inferential and Critical Comprehension, and Graphic Materials. A variety of passages, informative, literary, and persuasive, are included.

The Letter and Word Reading Test (Mason and McCormick, 1979)

The Letter and Word Reading Test (LWRT) was originally developed to be administered to beginning readers (kindergarten and grade one students). In the Kendall et al. study (1987) examining the transfer of reading skills of kindergarten, grades one and two French immersion students, the LWRT test was modified by the researchers to reflect the better developed reading skills of the older grade two students (LWRT 2). For use in the present study, the LWRT 2 test was further modified by the author in consultation with an expert in the field of reading (Dr. Mary Sakari, S.F.U.). The LWRT 2 test consisted of three subtests: Reading Common Words (20 items), Reading Pseudowords (nonsense words composed of English sounds, 30 items), and Spelling Common Words (15 items). Some items in all three subtests were deleted, changed, or added in order to reflect the higher reading ability of the grade four students tested. In the Reading of Pseudowords subtest, 11 of the items used in the LWRT 2 were retained, others were slightly modified (e.g. the insertion of a consonant) and items with more difficult

letter combinations, consonant blends and digraphs, and two or three syllables were added (some pseudowords were chosen from the Woodcock-Johnson Test, 1977). In the Reading Common Words and Spelling Common Words subtests, a few more difficult words with regular and irregular spelling were selected from Kottmeyer's Guide for Remedial Reading (provided by a Learning Assistance teacher in the experimental school district; a copy is attached in the appendix), and from the Wide Range Achievement Test (Jastak and Jastak, 1978).

This modified version of the LWRT test was administered to a random sample of twenty grade four French immersion students in each of the two districts involved.

French LWRT

A French version of the LWRT test was constructed by the author. This consisted of the three subtests described above; Reading Common Words (la Lecture des mots), Reading Pseudowords (les Mots artificiels), and Spelling Common Words (l'Orthographe). The same number of items as in the English version of the LWRT were constructed in each subtest, but words and letter combinations were French. For the Lecture des Mots

subtest, items were selected from the two ministry prescribed reading texts, as well as from the Test de Lecture (Barik and Swain, 1979), Test de Lecture et de Langage Francais (Coquitlam, 1985) and the Test de Comprehension en Lecture (Forget, 1981). For the Mots Artificiels subtest, French pseudowords were constructed to reflect a wide range of French sounds (a published source for French pseudowords did not exist). For l'Orthographe, words were selected from a list of grade four spelling words compiled by the Coquitlam School District.

All French and English LWRT test items were pilot-tested on a group of grade four or five students and several French immersion and English teachers were asked to give input. Items found to be too difficult were discarded.

Procedures:

The Test de Lecture was administered to all grade four early immersion students in both the experimental and comparison school districts. Each classroom teacher administered this test to the entire class in one 45 minute sitting during a two week period in April, 1988. The author met with all teachers in both districts to outline the procedures prior to the administration of the test. All tests were scored by the author. Scores were then verified and divided into domains by a group of university students.

The English Reading Comprehension Test was administered to all grade four students across the province in French immersion, as well as regular English classrooms, as part of the 1988 Provincial Assessment of English reading and written expression. This test was also given in one sitting of 45 minutes, in May, 1988 by the classroom teachers. An outline of administration procedures for the test was provided to the teachers. Results for this test were analyzed by the Ministry of Education and data for the immersion

classes in the experimental and comparison districts were provided to the author in the fall of 1988.

For the individual oral reading tests (the French and English LWRT tests), a sample of approximately 20-25% of the grade four immersion students in the experimental and comparison districts was selected. The grade four immersion teachers in both districts were asked to rate their students as being either low, average or high in general reading ability, then to identify those students felt to be extremely low or extremely high (a copy of the guidelines provided to teachers is included in Appendix A). The students identified as "extremes" were then eliminated in order to allow the selection of a sample of students of average, or close to grade level, reading ability. Any students identified as having learning disabilities, or who spoke French in the home, were also omitted from the selection. A random sample of twenty students from each of the two school districts was then chosen from the screened lists to participate in the individual testing.

The LWRT tests were administered by the author or a research assistant during a two week period in May,

1988 (students in two schools in the comparison district and one school in the experimental district were tested by the author, and students in one school in each of the two districts were tested by the research assistant). The French and English versions of the LWRT were given separately in order to avoid confusion on the part of the students tested. For the Reading Common Words and Pseudowords subtests, students were tested individually and their responses were tape-recorded. The Spelling Common Words subtest was given in small groups of four or five students.

Table III outlines the tests administered, the number of students tested, and the administration procedures.

**Table III
Summary of Tests
Administered**

Test Administered:	Number of Students Tested		Administration Procedures
	Comp. Dist.	Exp. Dist.	
B.C. Reading Assessment Test	N=102*	N=87	<ul style="list-style-type: none"> - administered by all grade four classroom teachers as part of Prov. Assess. - May, 1988
Test de Lecture	N=106	N=87	<ul style="list-style-type: none"> - administered by classroom teacher - all grade 4 FI students in both districts - Apr. 1988
LWRT Test (Eng.. and Fr.)	N=20	N=20	<ul style="list-style-type: none"> - administered by author or research assist. - individually to random sample - May, 1988

*(Four students were absent at time of testing)

Design of the Data Analysis

1. B.C. Assessment of Reading Test (Test of English reading comprehension)

Data for this test were provided to the author by the Student Assessment Branch of the Ministry of Education. Mean percent correct scores and standard deviations for the experimental and comparison district, and each of the districts' French immersion schools (French immersion population only) were obtained. Because raw data were not provided, and therefore analysis of variance was not possible, a t-test for two unmatched samples was carried out to statistically compare scores in the two districts.

2. Test de Lecture (French reading comprehension test)

A Hotellings multivariate analysis of variance (MANOVA), with univariate analyses for the four domain scores of this test, was carried out to reveal differences between the experimental and comparison districts. Teacher ratings of students' general reading level were also compared.

3. Letter and Word Reading Test (LWRT): French and English versions

Percent correct scores were calculated for each subtest and numbers and types of errors made by students were compared in order to examine the transfer and interference of reading skills between the two languages.

CHAPTER 4

RESULTS OF THE STUDY

Introduction:

In this chapter, the results of the study are presented, beginning with a quantitative analysis of the students' performance on the two domain-referenced reading comprehension tests: the British Columbia Reading Assessment Test (English) followed by the French Test de Lecture. A qualitative analysis of students' responses on the Letter and Word Reading Tests (both English and French) is then presented.

English Reading Comprehension:

Results of the British Columbia Reading Assessment Test, part of the 1988 Provincial Assessment, were analyzed in order to examine one of the major questions posed in this study; "Is there a significant difference in the English reading achievement of grade four students enrolled in an immersion program where English language instruction is delayed to grade four and comparable students

enrolled in a program where English instruction is introduced in grade three?"

Table IV summarizes the experimental and comparison districts' mean test scores as well as the mean scores for each of the French immersion schools in the two districts (French immersion population only). Because the raw data were not provided to the researcher, and therefore, analysis of variance was not possible, a t-test for unmatched samples was applied.

No significant difference in English reading comprehension was indicated by the test scores of the students enrolled in the two districts. Students in the experimental district performed as well as those in the comparison district, even though they had received a full year less instructional time in English language arts.

Table IV

B.C. English Reading Assessment Test:
Mean Percent Scores of
Experimental and Comparison Districts'
French Immersion Population

	Number of Students	Mean Percent Correct	Standard Deviation
Comparison District	N = 102	77.1	18.3
School #1	N = 26	67.6	22.7
School #2	N = 37	82.4	14.5
School #3	N = 37	79.1	15.2
Experimental District	N = 87	76.7	16.9
School #1	N = 54	78.5	16.8
School #2	N = 33	73.9	17.1

$t = 0.137$ (not significant, $p > 0.05$)

French Reading Comprehension:

In order to examine the following question; "Is there a significant difference in the French reading achievement of grade four students enrolled in a French immersion program where English language arts are introduced in grade four and comparable students enrolled in a program where English language arts are introduced in grade three?"; the grade four French immersion students' performance on the Test de Lecture was analyzed and compared.

Mean and mean percent correct scores for each of the four domains of this French reading comprehension test (Vocabulary, Literal Comprehension, Inferential/Critical Comprehension, and Graphic Materials) are presented in Table V. The teacher ratings of students' general reading level and the domain scores were analyzed using a one-way multivariate analysis of variance (MANOVA). Results indicated a reliable difference between the experimental and comparison districts, $F(1,191) = 2.88, p < .05$.

Univariate analyses showed no significant difference between districts in the teacher ratings of

students' reading level (each student was rated by his/her classroom teacher on a five point scale, from 1 - low extreme, to 5 - high extreme). Reliable differences were found, however, on three of the four domains (Vocabulary, Literal Comprehension, and Inferential/Critical Comprehension), favoring the experimental district over the comparison district. No difference was indicated on the fourth domain, Graphic materials.

Table V
Test de Lecture Domain Scores

	Mean Scores - Mean Percent (Standard Deviations)				F
	Comparison (n=106)		Experimental (n=87)		
Domain 1: Vocabulary (max. = 8)	4.4 (1.82)	55%	5.1 (1.68)	63%	8.39*
Domain 2: Literal Comp. (max. = 9)	6.2 (2.10)	69%	6.8 (1.89)	76%	4.29*
Domain 3: Inferential/ Critical Comp. (max. = 13)	6.5 (2.80)	50%	7.4 (2.86)	57%	4.61*
Domain 4: Graphic Mat. (max. = 6)	4.1 (1.56)	68%	4.5 (1.22)	75%	3.44
Teacher Ratings: Reading Level	3.0 (1.02)		3.0 (1.06)		0.31

*p < .05, df = 1, 191

The Transfer and Interference of Reading Skills

In order to answer the third question posed in this study, that is, "Is there a significant difference in the transfer and/or interference of reading skills a) from the native to the second language or b) from the second language to the native language demonstrated by the students in these two programs?", students' responses on the Letter and Word Reading Tests (French and English) were examined.

Descriptive data are presented in three sections. First, percent correct scores received by the experimental group and the comparison group on the Pseudowords, Reading Common Words, and Spelling Common Words subtests (both in English and in French) are compared. The percentage of types of errors made by each group (that is: real words, nonsense words, and errors reflecting interference) in each of the subtests are then examined. Finally, an analysis of the words and sounds causing difficulty for the experimental and/or comparison group is presented.

Percent Correct: English LWRT subtests:

For each item in the three English LWRT subtests, a percent correct score was calculated (using the number of correct student responses divided by the number of students tested, i.e. 20). The mean percent correct scores of each of the three subtests were then calculated for both districts. No apparent difference in performance was indicated between students enrolled in the French immersion program in the experimental district and those enrolled in the comparison district's program. These scores are summarized in Table VI.

Students in both districts performed very well in the Reading Common Words Subtest (both groups obtained mean percent correct scores of 90%), but obtained somewhat lower scores on the Pseudowords subtest (comparison group: 64.2% ; experimental group: 65.8%). Both groups scored comparatively lower in the Spelling Common Words subtest (both groups obtained a mean percent score of 53.0%). These scores will be discussed further in the following chapter.

The results of the LWRT English Subtests presented above are consistent with the similar test scores received by the students of both districts in the B.C. Assessment of Reading test.

Percent Correct: French LWRT Subtests

As for the English version of the LWRT subtests, a percent correct score was calculated for each item in the three French LWRT subtests (again, by dividing the number of correct responses by the number of students tested). The mean percent correct scores were then calculated for each of the subtests. The mean scores for the comparison and experimental districts are presented in Table VI.

Unlike the similar scores obtained by both groups in the English LWRT subtests, a difference was noted in the French LWRT subtests mean scores. As can be seen in Table VI, the French immersion students in the experimental district obtained consistently higher mean scores on each of the three French LWRT subtests. The most apparent difference was noted in the French spelling subtest (l'Orthographe). For this subtest, students enrolled in the experimental district's French

immersion program received a mean percent correct score 13.7% higher than the mean score obtained by the students in the comparison district.

For the 'Lecture des Mots' and 'Mots Artificiels' subtests (Reading Common Words and Pseudowords), the experimental group obtained mean scores approximately 7% higher than that obtained by the comparison group (88% compared to 80.8%, and 63.7% compared to 56.2%).

The differences noted in the French LWRT subtest scores seem to confirm and expand on the significant differences revealed in the scores obtained by the two groups on three of the domains of the French Test de Lecture.

A comparison of the results obtained in the two versions of the subtests, i.e. French and English, also revealed some interesting similarities and differences. French immersion students in both districts obtained high scores on the Reading Common Words subtest in English and in French (Lecture des Mots). However, the mean scores obtained on the 'Orthographe' (French spelling) subtest were comparatively higher than the scores received on the

English spelling subtest. This is understandable since students have had more exposure to and instruction in French spelling than English.

Students in the experimental district obtained similar mean scores on the French 'Mots Artificiels' and English Pseudowords subtests. Students in the comparison district, however, received a somewhat lower mean score on the French subtest than on the English. This would seem to indicate that students in the experimental district are equally able to decode in French and in English, whereas students in the comparison district seem somewhat better able to decode in English than in French.

Table VI
Mean Percent Correct Scores
French and English LWRT Subtests

	Comparison District		Experimental District	
	French	English	French	English
Pseudo- words	56.2%	64.2%	63.7%	65.8%
Reading Common Words	80.8%	89.8%	88.0%	90.0%
Spelling Common Words	64.0%	53.0%	77.7%	53.0%

Types of Errors Made: English LWRT Subtests

The responses made by students to the items on the LWRT subtests were categorized as follows:

0. Correct response, 1. English sounding nonsense word, 2. English real word (but incorrect), 3. Error due to interference (of French decoding skills), 4. Incorrect intonation, or accent, 5. No response (either the student was unable to complete his response, or did not attempt to respond at all).

Table VII summarizes the types and percentages of errors made in each of the subtests.

The most frequent of the errors made by students in both the experimental and comparison districts fall into the first category, Nonsense words, and could be attributed to incorrect decoding or spelling. A large proportion of these errors appear in the Pseudowords, and Spelling of Common Words Subtests. As would be expected, few such errors occurred in the Reading of Common Words Subtest. Since, in this subtest the words were meaningful, students relied less on decoding skills.

Students in both the comparison and experimental districts made few errors on the three English LWRT subtests that could be attributed to the interference of French reading skills (that is, applying French pronunciation or spelling incorrectly to the reading or spelling of English words). Again, most of these errors occurred in the Pseudowords, and Spelling Common Words Subtests. In the Reading Common Words Subtest only 2% of the students' responses could be attributed to French interference. Words where French interference type errors occurred most frequently are listed in Appendix D.

One would think that students reading lists of words and nonsense words would make a substantial number of real word type errors, substituting unknown or nonsensical words with familiar, meaningful words. This, however, was not the case. Surprisingly, in each of the districts, only 1% of the student responses in the Pseudowords subtest were real English words. The highest percentage of real word type errors occurred in the Spelling Common Words subtest. In this subtest, 6% of the responses made by students in the comparison district were real words, but spelled

incorrectly (two of the words on this subtest were homophones: **knew**, which could be confused with **new**; and **through**, which could be confused with **threw**).

A very small percentage (1% or less) of student responses in each of the three subtests were no response or errors due to incorrect intonation (most of these errors occurred in response to the word **official** in the Reading Common Words subtest, where some students stressed the first rather than the second syllable).

Table VII
Type of Error; English LWRT Subtests:

District:	Pseudo- words		Reading Common Words		Spelling Common Words	
	Comp.	Exp.	Comp.	Exp.	Comp.	Exp.
Correct Response	64%	66%	90%	90%	53%	53%
English Nonsense Word	27%	22%	4%	6%	32%	34%
English Real Word	<1%	1%	3%	2%	6%	3%
French Inter- ference	10%	11%	2%	1%	9%	10%
Accent/ Intonation	0	0	1%	1%	0	0
No Response	0	<1%	0	<1%	0	0

*(Percentages have been rounded to nearest percent, therefore, column totals may deviate from 100 by one percent.)

Types of Errors Made: French LWRT Subtests

As for the English LWRT Subtests, students' responses for each item on the French LWRT Subtests were divided into the following categories:

0. Correct response, 1. French sounding nonsense Word, 2. Real Word (French, but incorrect), 3. Interference (inappropriate use of English decoding or spelling), 4. Pronunciation (variations may occur due to dialect differences, e.g. the pronunciation of "h") 5. No response. Again, for all three subtests, the most frequent errors made by students in both districts fell into the category of Nonsense Words.

As was seen in the English LWRT test, a large proportion of errors occurred in the Mots artificiels subtest (pseudowords), where the students could rely only on their decoding skills. Students committed less errors in the Lecture des mots subtest (reading of common words) since these words were meaningful. Unlike the students tested in the Cziko study (1980) who had an intermediate knowledge of French and who tended to employ a "bottom-up" strategy while reading, relying heavily on graphic information, the grade four

students of the present study employed a more interactive strategy, relying on both meaning and graphic information when the words were meaningful.

In the Mots Artificiels subtest, students in both the experimental and comparison districts committed a higher number of errors that could be attributed to the interference of English decoding skills, than was seen in Pseudowords, the English version of this subtest (interference in the English subtest would be from French decoding skills). In the Mots Artificiels subtest, interference related errors represented 15% of the student responses in the experimental district, and 18% in the comparison district, as compared to only 10% and 11% in the English Pseudowords subtest. In the Lecture des Mots, and Orthographe subtests, only 2 to 5% of student responses were errors which could be attributed to English interference (see Table VIII). This would seem to indicate that when students were presented with unfamiliar French sounding nonsense words, they tended to rely more on their English decoding and encoding skills than they did when presented with more familiar French words. Words where English interference type errors occurred most

frequently are listed in Appendix D.

Students in both districts demonstrated a lower percentage of interference related errors in the French version spelling subtest than in the English version (5% and 2% for the French spelling subtest as compared to 9% and 10% for the English version). Again, this is understandable since these French immersion students have had more exposure and practice in French spelling than in English, and therefore, would tend to rely more on their French spelling skills.

Students in the comparison district made a higher percentage of nonsense type errors in the Lecture des Mots subtest than was seen in the English version of this subtest, Reading of Common Words (11% in the French subtest, only 4% in the English version). Students in the experimental district, however, demonstrated a consistent percentage of nonsense type errors in the English and French versions of the Reading Common Words subtest (6% in both subtests).

In both districts, less than 1% of the students' responses in each of the two French reading subtests reflected dialect differences in pronunciation or incorrect intonation (this type of error would not

apply to the spelling subtest). Most of these responses involved the pronunciation of the "h" which is usually silent although, may be pronounced, depending on dialect differences.

Less than 1% of the students' responses fell into the category of No Response. Students from both districts were able to attempt almost all items, there were very few instances of students "giving up", or not being able to complete a response.

Table VIII
Types of Errors: French LWRT Subtests

District:	Mots Artificiels		Lecture des Mots		Ortho- graphie	
	Comp.	Exp.	Comp.	Exp.	Comp.	Exp.
Correct Response	56%	64%	81%	88%	64%	78%
French Nonsense Word	26%	21%	11%	6%	26%	18%
French Real Word	<1%	<1%	3%	2%	5%	2%
English Inter- ference	18%	15%	5%	4%	5%	2%
Intonation/ Pronun- ciation	<1%	<1%	0	<1%	0	0
No Response	<1%	<1%	0	<1%	0	0

*(Percentages have been rounded to the nearest percent, therefore, column totals may deviate from 100 by one percent.)

Words or Letter Combinations Causing Difficulty

(English LWRT Subtests)

As found in the Kendall et al. study (1987) presented earlier, certain elements can be identified as causing difficulty for the French immersion students participating in this study. The difficulties experienced by students in the experimental and comparison districts were very similar. The most difficult words in each of the LWRT subtests (both English and French) are listed in Appendix E.

As discussed earlier, few errors occurred in the Reading Common Words subtest. Most of the difficulties were experienced in the Pseudowords subtest, where students had to rely completely on decoding skills, and in the Spelling of Common Words subtest, which included many items with irregular spelling.

Kendall et al. found that the grades one and two French immersion students tested in their study performed most poorly in the pronunciation of final consonants. This was not evident, however, in the present study's grade four students' performance.

Although individual elements seemed to be more difficult, in most cases, this did not seem to be a function of their position in the word. There were surprisingly few instances of dropping final consonants, which would reflect the interference of French decoding skills (only 7 responses out of a possible total of 520).

As in the Kendall et al. study, students in the present study found consonants (especially consonant digraphs) which differ in sound-letter correspondence in English and in French, or which rarely occur in French more difficult. The "g" of **coge**, the "qu" of **quog** (and in **quote** and **squeeze** in the Spelling subtest), the "ph" of **yaph**, the "kn" of **knance** and **knoisk**, the "ch" of **chorp** and **churts**, each caused difficulty for 25% or more of the students tested. It should be noted, however, that the grade four students' performance in this study represents a great improvement over the performance of the grade two students in the Kendall et al. study. For example, 38% of the grade four students, as compared to 67% of the grade two students, pronounced "ch" of the pseudoword **chorp** incorrectly.

Unlike the grade one and two students of the earlier study, these grade four students did not experience a great deal of difficulty with the "th", which does occur in French, but is pronounced differently, or the "sh" which does not occur in French (except in anglicisms), students in the present study read and spelled these digraphs with surprisingly few errors. In the original study, over 50% of the grade two students wrote "ch" instead of "sh" when asked to spell the word **shred**, whereas only 10% of the grade four students tested in the present study did so.

Kendall et al. found that the grade two immersion students demonstrated rather weak skills in segmenting and blending phonemes. The grade four students, however, had little difficulty reading and spelling two and three letter initial consonant blends such as "gl", "sw", "thr", "spr", and "spl". Less than 3% of these blends were read incorrectly, less than 5% were spelled incorrectly. The students did, however, experience more difficulty with final consonant/vowel combinations such as "nkle" of the

spelling word **sprinkle** and "gles" of the pseudoword **sneegles**. Less than 50% of the grade four students responded correctly to these words.

Examination of the grade four French immersion students' reading and spelling of vowel patterns also revealed some specific elements which caused difficulty. As Kendall et al. found, in general, the students performed well in the reading and spelling of short vowels. Very few errors occurred in the reading of pseudowords such as **yaph**, **strift**, and **drect**. Few errors were made involving the spelling of the short vowels in **dancing** and **judge**, and although only half of the students wrote correct responses for **shred**, the majority wrote "shread", which is a logical spelling since the "ea" representing a short "e" sound occurs in many common words in English. Students performed less well reading the short "o" of **quog**, where 20% responded with a long "o". This might have resulted from the confusion over the combination "qu" (students found this word difficult, only 35% responded correctly). Although the short "u" of **whumb** was read correctly by the majority of students, there were 7 instances (18%) of French

interference in the spelling of **crunch**, where "o" was written in the place of "u".

Although students performed well in the reading of the vowel digraphs in the pseudowords such as **feap**, **wrowtch**, **sneegles**, **phay**, and **straish**, other digraphs seemed to cause more difficulty. The vowel digraphs in the following pseudowords were read incorrectly by 25% or more of the students tested: **gloy**, **blooth**, **knoisk**, **gloud** (these digraphs were frequently pronounced incorrectly as long "o" or short "o"), **splaunch**, and **saist**, (25-30% of the responses made in reading these two pseudowords reflected French pronunciation of the vowel sounds, that is French interference). Although 38 of the 40 students read the "aw" correctly in **thraw**, only half of them spelled this digraph correctly in the word **yawn** (most of the errors did, however, reflect a logical spelling pattern such as "yon", or "yone"-as in "gone").

In the Kendall et al. study, over half of the grade two French immersion students tested used the French pronunciation ("ee") of the vowel "y" in the pseudoword **shry**. Although to a lesser degree,

French interference was also seen in the present study. Twenty-eight percent of the grade four students read "ee" for the "y" in **shry**. This pattern can also be seen in the spelling of the word **reply** where only less than half of the students wrote the correct ending.

Kendall et al. found that the French immersion students in their study were beginning to develop, but were still unclear in their differentiation between English and French in the use of the final "e". In French, the "e" at the end of a word indicates that the final consonant is pronounced, but does not change the pronunciation of the vowel as it does in English (a final "e" usually indicates that the vowel is long, e.g. "hat" vs. "hate"). The majority of the grade four students tested in the present study read the long vowel sound correctly in the pseudowords **wrofe** and **sweve** and wrote the final "e" in the spelling words **splice**, **while**, and **choke**. However, in one particular pseudoword (**coge**) the vowel sound was incorrectly pronounced as a short "o" by over half of the students and 28% did not write the final "e" in the spelling word **quote**. Although the students are

able to differentiate between the French and English use of the final "e", some confusion still exists for many of them.

To summarize, although some students experienced difficulty reading or spelling some of the letter combinations in the Pseudowords and Spelling Common Words subtests, in general, they performed very well. When compared to the results of the Kendall et al. study, the grade four students of the present study demonstrated improved graphophonic and word knowledge. Although some instances of French interference occurred, these grade four students seem better able to differentiate between reading and spelling in French and in English than the grade two students of the earlier study.

DISCUSSION

The French immersion program in the experimental district was modified by delaying the introduction of English language arts instruction until grade four. The rationale behind this modification was that this would provide students in the immersion program increased exposure to the French language, thus helping to improve their second language skills. It was thought that this program change would have little or no detrimental effect on students' development of English language skills. This study was conducted to examine the above hypotheses through a comparison of the French immersion programs offered by two lower mainland school districts: one where English language instruction is introduced in grade three, and one where English language arts are delayed until grade four.

In this chapter, the interpretation and discussion of the findings of this study are presented along with the limitations and implications for further research.

Is there a significant difference in the English reading achievement of the grade four students enrolled in these two programs?

The B.C. Reading Assessment Test was administered to all grade four English stream and French immersion students as part of the 1988 Provincial Assessment. The mean scores provided by the Student Assessment Branch of the Ministry of Education indicated no significant difference in performance between the students enrolled in the experimental district's French immersion program (where English instruction is delayed until grade four) and the students of the comparison district's program (where English instruction is introduced at grade three). Even though the students in the experimental district had received a full year less instructional time in English language arts, they performed as well as those in the comparison district.

The results of the English version of the LWRT (Letter and Word Reading Test), administered to a sample of twenty students from each district, also indicated no significant difference in the English word attack and spelling skills demonstrated by the students

in these two programs.

The rapid acquisition of English skills of students enrolled in French immersion programs has been found in several studies comparing the performance of French immersion students to that of English stream students (Genesee & Stanley, 1976; Lambert & Tucker, 1972; Shapson & Day, 1982). Once English language instruction has been introduced in French immersion programs, students quickly catch-up to their peers in English comparison groups.

One might expect that a delay in the introduction of English language instruction would result in students lagging behind those enrolled in a program where English language arts are introduced earlier. Results from the present study, as well as previous research, indicate that this is not the case. Evaluative studies comparing French immersion programs where English language instruction is introduced at grade 2, 3 or 4 indicate no advantages to the early introduction of English. Further, these studies reveal no detrimental effect on English language development as a result of delaying the introduction of English language instruction (Genesee, 1984; Genesee &

Lambert, 1983; MacDougall & Bruck, 1976).

Little is known about why this acceleration in the acquisition of English language skills occurs in students enrolled in French immersion programs. One explanation is that a great deal of English skills seem to be learned informally, outside of school. Parental involvement may also be a factor in the rapid development of English reading skills. Another possible explanation for this phenomenon is that students are transferring skills that they have learned in French to the tasks of reading and spelling in English. The transfer of skills between the two languages is examined further in this chapter along with the results of the LWRT tests.

Is there a significant difference in the French reading achievement of the students enrolled in these two programs?

In order to examine French reading comprehension, the Test de Lecture, originally administered in 1987 as part of the Provincial French Immersion Assessment, was given to all grade four immersion students in both the

experimental and comparison districts. Teacher ratings of students' general reading ability and the mean percent scores for each of the four domains (Vocabulary, Literal Comprehension, Inferential/Critical Comprehension, and Graphic Materials) were compared.

Although the students in these two districts were not matched for IQ, the similarity in the two populations was indicated by the lack of difference in the teacher ratings of the students' general reading levels. Classroom teachers rated each student using a five point scale from 1 (extremely low reading ability) to 5 (extremely high reading ability). Specific criteria for rating students' reading ability were provided to the teachers (see Appendix A), however, it is difficult to determine if similar standards were used in their ratings. This will be discussed further in this chapter under limitations of the study. The mean reading ability of the students, as rated by the classroom teachers, in both districts was 3.0, average. The standard deviations of these ratings were also very close (1.02 for the comparison district and 1.06 for the experimental district), therefore it would

seem that these two populations could be considered similar in distribution of general reading ability.

Students enrolled in the French immersion program in the experimental district attained significantly higher mean percent scores on three of the four domains than did the students in the comparison district. No significant difference was noted in the fourth domain, Graphic Materials.

Examination of the results of the French version of the LWRT (Letter and Word Reading Test) subtests yielded findings similar to those of the French Test de Lecture. Students in the experimental district obtained consistently higher mean percent correct scores on each of the three subtests than did the students in the comparison district.

When examining the results of the French reading comprehension test and the French LWRT test, it would seem that the students in the experimental group have benefitted from the increased exposure to French language instruction. The pertinent literature also seems to support this conclusion.

Genesee (1984) distinguishes between three phases of the early French immersion program depending on the

amount of instructional time spent in the two languages, French and English. During the first of the phases, total immersion, French is used as the sole medium of instruction; in the bilingual phase, both French and English are used in varying proportions; and in the final phase, maintenance (at the secondary level), only a few courses are taught in French. Perhaps, extending the total immersion phase by one year, starting the bilingual phase at grade four rather than grade three, allows students to solidify their French language skills for an additional year before having to cope with reading and spelling in two languages simultaneously.

Evaluative studies comparing core French, partial, and late immersion programs to early immersion programs (Genesee, 1981 and 1978; Swain, 1978) suggest that the amount of exposure to the second language, French, may be an important factor in determining the level of achievement in French. Halpern (1984) contends that:

There is strong support in favour of the position that the more time spent studying

the second language, the greater the probability that the individual will achieve a high level of sophistication in the language. (p. 27)

The results of the present study, along with the existing literature, seem to support the contention that delaying the introduction of English language arts to grade four, therefore increasing exposure to French language instruction, allows students to further develop their second language skills.

Is there a significant difference in the transfer and/or interference of reading skills between languages (i.e. French to English and English to French) demonstrated by the students in these two programs?

An English and a French version of the LWRT test (Letter and Word Reading Test) were administered individually to a random sample of twenty students, reading at or close to grade level, from each school district in order to examine the transfer and/or interference of specific reading skills between the

languages. The results of the English version of the LWRT subtests indicated no apparent differences in the graphophonic, word reading, and spelling ability of the students enrolled in the two immersion programs. Students in the experimental district performed as well as those in the comparison district, even though they had received one year less instruction in English language arts.

As presented earlier, one possible explanation for this apparent acceleration of the development of English language skills demonstrated by the experimental group is that these students have transferred the skills they have learned in French to the reading and spelling in English. Although research in the area of transfer of skills between languages is somewhat limited, most experts in the field of reading in French immersion identify this phenomenon as a major factor in the immersion students' rapid development of English reading skills (Genesee, 1979b; McDougall and Bruck, 1976; Swain, 1974). In a recent longitudinal study following the development of spontaneous reading in English demonstrated by a group of young French immersion students, Eagan and Cashion (1988) found

that, outside of school, these grade one and two children attempted to read and/or write in English on a daily basis. When they attempted to read English, they generally transferred their French graphophonic knowledge to the English words.

Along with the transfer of skills learned in French to the tasks of reading and writing in English, immersion students also seem to develop early in the program the ability to differentiate between the tasks in these two languages (Kendall et al., 1987). Although immersed in a French environment at school, these children are immersed in an English environment in their home and their community and are constantly exposed to English print, and therefore, to many opportunities to develop reading skills in this language. As early as grade one or two, immersion students develop an awareness that what they have learned in French can not always be applied to the reading and spelling of English words. Kendall et al. found that the grade two French immersion students in their study made few errors in the reading and spelling of English words that could be attributed to the erroneous application of French phonetics. The results

of the present study support these findings. The grade four students in both the experimental and comparison districts made very few errors due to French interference. Most of these errors occurred in the Pseudowords and Spelling of Common Words subtests, where students had to rely on graphophonic knowledge and knowledge of regular and irregular spelling patterns in English. When students could rely more on meaning, that is on the Reading of Common Words subtest, only two percent or less of their responses could be classed as errors due to French interference.

To summarize, the students in the experimental districts' French immersion program seem as equally able as those in the comparison program to transfer the skills they have acquired in French to the reading and spelling in English. They have also, with one year less instructional time in English language arts than the grade four students in the comparison district, equally developed their ability to differentiate between reading in French and English. Both groups seem able to read and spell in English with few instances of French interference.

Student responses to the French version of the

LWRT subtests were also examined in order to identify instances of English interference. One might expect that the longer students were exposed to English language instruction, the more they would become confused between the two languages, and therefore, the higher the occurrence of English interference. This did not, however, seem to be the case. Although students in the comparison group, who began English Language arts instruction one year earlier than the students in the experimental group, did obtain inferior mean percent correct scores on the three French LWRT subtests, the differences between groups in the occurrence of interference were minimal. Students in the comparison district's French immersion program generally made a greater number of errors while reading and spelling in French, but these errors did not seem to be caused by confusion between the two languages. As suggested earlier, perhaps the additional year of exclusive French language instruction has allowed the students in the experimental district further exposure and practice in the second language thereby helping them to attain a higher level of achievement.

What recommendations may be made concerning the implementation of the French immersion program in districts where a delay in the introduction of English language instruction has been or may be considered?

The findings of this study suggest that a delay in the introduction of English language arts in an early French immersion program from grade three to grade four may be advantageous. Students in the experimental program, where English language arts are introduced at grade four, demonstrated no detriment in the development of reading comprehension, graphophonic or spelling skills in English. These students did, however, perform consistently better than the students in the comparison district in these same tasks in French.

The experimental school district was one among several other districts to implement this modification to its French immersion program within the past few years. It was thought that, by delaying the introduction of English language arts instruction, thus increasing exposure to French language arts, students' French language skills would benefit. Although it

cannot be concluded with certainty that an immersion program where English language instruction is delayed to grade four is a superior program to one where English language arts are introduced in grade three, it would seem, given the results of the present study, that the experimental district's decision to modify the program has been a positive one.

This study should comfort those school districts who have already implemented the delay in English language instruction and should assist those school districts who are presently considering such a modification to their French immersion programs.

The results of the English and French LWRT tests should also be of interest to French immersion teachers, specifically to teachers providing English language arts instruction in French immersion programs. It would be beneficial to provide opportunities to practice in reading and spelling, the letter combinations and words found to cause difficulty for the grade four students tested. This is not to suggest that teachers present these items in isolation, rather, that they expose students and draw their

attention to these difficult words and letter combinations in context in many different situations.

Limitations of the Study and
Implications for Further Research

The following are considered to be the methodological limitations of the study. Areas for further research are also discussed.

This study involved the comparison of the French immersion programs offered in two lower mainland school districts. In order for the results to be more generalizable, it would be desirable to widen the sample and include several school districts. Replication of this study in other areas of this province as well as in Canada would yield valuable findings.

The comparison district was chosen because of the similarity in size, in S.E.S. background of the French immersion student population, and in programs. Although some precautions were taken (teacher ratings of students were compared and found to be very similar,

a random sample was used for the individual testing, and students with extremely high and low reading levels were excluded), the student samples were not matched, therefore possible differences in student populations must be considered.

Guidelines for the rating of students' general reading ability were provided to teachers, however, because of the subjective nature of these ratings, standards used by the teachers may have differed. Again, possible differences in the student populations of the two districts should not be disregarded.

Differences in teaching strategies and methods of the teachers involved could not be controlled in a study of this nature, and therefore should also be considered.

This study involved students of only one grade level, that is grade four. A longitudinal study following groups of students from grade two, before English language instruction is introduced, to a later intermediate grade would provide further information about the success of delaying English language arts. Such a study could examine further the development of English reading skills and the phenomenon of transfer

demonstrated by students in French immersion programs. In a study of this nature, it would also be of interest to investigate the effects of parental involvement on the development of English reading skills. Parental involvement was not examined in the present study because it was not thought to be as major a factor at the grade four level as it would be in the earlier grades, before formal English language instruction is introduced.

The students' performance in the areas of reading (comprehension and graphophonic skills) and to a lesser extent, spelling, were examined. In order to expand on the findings of this study, it would be of interest to examine other areas as well, such as listening and speaking skills in French, and writing skills in both English and in French. Research involving comparisons with francophone students and students in regular English classes would also provide valuable information.

Delaying English language arts instruction, thus increasing exposure to the second language, French, may be beneficial to the development of skills in the

second language. This modification should not, however, be considered a final, optimal solution to the problem of improving the French language skills of students in immersion programs. Further research is necessary to examine the effects of such variables as teaching methods and pedagogical materials, and to identify strategies that enhance second language acquisition.

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APPENDIX A

Guidelines for the Rating of Students' Reading Ability

Dear Grade 4 French Immersion Teacher:

I will be carrying out a study comparing the reading skills of grade four immersion students enrolled in two different French immersion programs, (i.e. one where English language arts is introduced in grade three and one where English instruction is delayed until grade four). I will be selecting a random sample of 20 average grade 4 students from the French Immersion program in your school district. In order to do this, I need your help in identifying the reading ability of your students.

I) Could you please take a few moments to fill out this sheet and attach a class list indicating the information requested below:

1. Name of School: _____
2. Teacher's name: _____
3. Is your class a straight grade 4, split 3/4, or 4/5 ? _____
4. How would you describe the general reading ability of your grade four students as a whole?
 High ability ____ Average ability ____
 Low ability ____
5. If you rated your class as high or low in general reading ability, was there a specific reason for this grouping (e.g. the high-average grade fours were selected for the 4/5 split class)?

II) On a class list could you please:

1. Rate each grade 4 student as H for high, A for average, or L for low in terms of reading ability.

Suggested guidelines:

High reading ability: students who are good oral readers, who demonstrate good decoding skills and good comprehension; perhaps reading above grade level; who are self-confident and show little stress while reading

Average: students who read orally less smoothly, who perhaps spend more time identifying words, who demonstrate good comprehension of texts with fewer concepts; reading at about grade level

Low: students who demonstrate poor oral reading (many hesitations, slow reading rate) and poor comprehension; who have difficulty identifying many words; reading below grade level, perhaps low self-confidence, easily distracted

2. Indicate by an * the students you consider to be at the "extremes":
i.e. the top of high reading ability and the bottom of low reading ability. You may find that you have 1, 2, 3 or more students at each extreme, or that, depending on your class, you may have more students at one extreme of the ability range than the other.

Thank-you very much for your cooperation and help.

C. Donaldson

ABSTRACT B:

Letter and Word Reading Test: English Subtests

Pseudowords

yaph	shry	knance
churts	strift	sneegles
feap	jamper	blooth
wrowth	knoisk	splaunch
quog	saist	whumb
gloy	coge	straish
bloast	theeck	phay
thraw	wrofe	sweve
chorp	thright	lindify
gloud	frimble	drect

Reading Common Words

strange	ocean	signal
protection	knife	enough
purchase	official	choice
physical	canyon	fountain
height	original	quality
advice	imaginary	thoughtful
prove	phrase	

Spelling Common Words (These words were presented to students in sentences)

while	dancing	quote
squeeze	error	sprinkle
crunch	splice	through
knew	reply	judge
choke	shred	yawn

Letter and Word Reading Test: French Subtests

Des Mots Artificiels

doin	grail	plouque
struche	togne	cileau
steuge	etignole	autule
thecrates	flais	crun
ampesse	prongue	bilere
chyve	fremps	rallod
jauser	quain	morbe
vROUTISE	emplain	faution
aigot	hontille	nuiche
legons	gefere	houtrepas

La Lecture des Mots

une promenade	un impermeable	un magasin
un endroit	le feuillage	l'hospital
un parapluie	une casquette	merveilleux
fatigue	ennuyeux	un repas
le theatre	la journee	grogner
un magicien	une structure	du chocolat
des cailloux	des renseignements	

l'Orthographe (These words were presented in sentences)

un crayon	meilleur	minuit
vieux	un manteau	le printemps
une histoire	la cheminee	beaucoup
ecraser	les mains	jamais
quand	la recreation	la gorge

APPENDIX C

FROM KOTTMEYER'S "TEACHERS' GUIDE FOR REMEDIAL READING"DIRECTIONS FOR DIAGNOSTIC SPELLING TEST

Give List 1 to any pupil whose placement is second or third grade. Give List 2 to any pupil whose placement is above Grade 3.

Grade Scoring, List 1:

Below 15 correct	Below Second Grade
15 - 22 correct	Second Grade
23 - 29 correct	Third Grade

Any pupil who scores above 29 should be given the List 2 test.

Grade Scoring, List 2:

Below 9 correct	Below third Grade
9 - 19 correct	Third Grade
20 - 25 correct	Fourth Grade
26 - 29 correct	Fifth Grade
Over 29 correct	Sixth Grade or better

Any pupil who scores below 9 should be given the List 1 test.

DIAGNOSTIC SPELLING TESTList 1

not	like	come	after
but	found	what	sister
get	down	those	toy
sit	soon	show	say
man	good	much	little
boat	very	sing	one
train	happy	will	would
time	kept	doll	pretty

List 2

flower	jump	biting	can't
mouth	jumps	study	doesn't
shoot	jumped	studies	night
stood	jumping	dark	brought
while	hit	darker	apple
third	hitting	darkest	again
each	bite	afternoon	laugh
class	through	grandmother	because

APPENDIX D

English LWRT test items: Most frequent instances
of French interferencePseudowords

quog (qu = k)	shry (y = e)
splaunch (au = u, o)	saist (ai = e)
(ch = sh)	coge (g = j)
straish (ai = e)	sweve (e = e)
chorp (ch = sh)	thright (th = t)
gloud (ou = ew)	(t silent)
lindify (y = e)	

Reading Common Words

official (o)

Spelling Common Words

dancing (c = s)	squeeze (z = s, qu = q)
sprinkle (k = q)	(ee = i)
(le = elle)	crunch (u = o)
reply (y = ai)	judge (dge = ge)
shred (sh = ch)	

French LWRT test items: Most frequent instances of
English interferenceles Mots artificiels

(letters and letter combinations in parentheses were pronounced as they would be in English)

struche (ch)	thecrates (th)
ampesse (am)	fremps (em, p)
rallod (od)	jauser (s)
quain (qu)	vrouitise (s)
aigot (ot)	

la Lecture des mots

ennuyeux (en)	structure (first u)
theatre (th)	

l'Orthographe

meilleur (eur = er)	manteau (an = on)
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APPENDIX E
Most difficult words

More than 30% of the students tested responded incorrectly to the following words:

English LWRT test items:

Pseudowords

yaph	gloy
wrowth	quog
shry	knance
blooth	knoisk
sneegles	splaunch
whumb	saist
coge	wrofe
lindify	chorp
gloud	

Reading of Common Words

prove

Spelling of Common Words

while	quote
squeeze	error
sprinkle	through
knew	reply
judge	choke
shred	yawn

Most difficult words

French LWRT test items:

les Mots artificiels

struche
 steuge
 thecrates
 prongue
 rallod
 quain
 aigot
 gefre

togne
 etignole
 ampesse
 fremps
 jauser
 vroutise
 legons

la Lecture des mots

des renseignements
 ennuyeux
 un impermeable

le feuillage
 une structure
 des cailloux

l'Orthographe

meilleur
 la cheminee
 jamais

un manteau
 ecraser