FRENCH AND ENGLISH LITERACY AND INTENSITY OF EXPOSURE TO FRENCH
IN A FRENCH IMMERSION PROGRAMME

by

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This study addresses the effects of increased intensity of second language immersion instruction upon literate proficiency in the first and second languages of intermediate students. This four year longitudinal study assessed the effects upon French and English literacy of maintaining French language as the medium of instruction for 80% of the core academic subjects and English at 20% from grade four through seven of a French immersion programme. The school is situated in a predominantly English-speaking area of Vancouver, Canada. For pedagogical reasons, school personnel wanted to know whether French literate proficiency would be enhanced in the 80% programme attempting to overcome a perceived plateau effect, and whether English literate proficiency would compare favorably for students in that programme's 20% English provision. From a theoretical perspective, this study provided an opportunity to broaden our understanding not only about time (intensity) as an important factor in second language learning but also about some of the theoretical perspectives of bilingualism (notably transfer of learning).

All 81 pupils who entered the fourth and fifth grades respectively of the single-track French immersion school participated in the study. The younger group followed the newly introduced 80% French, 20% English language programme, while the older group followed the 50% French, 50% English programme used throughout the school district for intermediate grades.

Results indicate that while a positive outcome from the French descriptive writing task may have some important implications in support of the 80% enhanced programme in light of its relatedness to academic writing, students' French literate proficiency was generally not enhanced by the innovation. As predicted, students' English literate proficiency generally compared favourably to students in the more traditional 50% programme. Pedagogical issues and explanations as well as theoretical perspectives are discussed in light of these results.
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In the traditional early French immersion model in Canada, the language of instruction for all students entering kindergarten and/or grade one is exclusively French. This continues through the primary years. English, as a language of instruction and as an academic subject, is introduced in grade four and the programme maintains a bilingual nature through the intermediate years, whereby 50% of the curriculum is delivered in French and 50% is delivered in English. Based on anecdotal reports of experienced teachers in the French immersion programme, teachers at the primary level generally report a high level of usage of French in the classroom and an extremely rapid and extensive growth and development of students' French language skills. However, it seems that once English is introduced into the classroom during the intermediate years, teachers report that there is a marked slowdown in the development of students' French language skills at least as far as grammatical competence is concerned - particularly with the expressive skills of speaking and writing. Several reviews of French immersion research (Cummins, 1987; Halsall, 1989) have reported this observation, which is generally referred to as a plateau effect.

Compounding this plateau effect are the research findings which seem to indicate that at least 40% of instructional time is needed to simply maintain students' level of second language proficiency in the French immersion context (Morrison et al., 1978 in Carey, 1984).
In an attempt to overcome a perceived plateau effect in second language learning in the standard model of early French immersion instruction and to meet the related educational goal of continuous progress in language and general academic development, it was proposed by an elementary administrator of a French immersion centre in the Vancouver school district that the French language component of the intermediate programme be enhanced from 50% to roughly 80% and that of the core academic subjects, only English Language Arts would be delivered in English. As the proposal was endorsed by both staff and parents at the school, the innovation was implemented incrementally beginning with the grade fours in the fall of 1995.

This school based decision provided an opportunity for partnership with the university for a controlled quasi-experimental assessment study of the innovation. A four year longitudinal, double cohort assessment of the efficacy of maintaining French language instruction at an 80% level and English at 20% of core academic instruction through the four intermediate school years was designed by Dr. Kenneth Reeder, entitled "L'Ecole Jules Quesnel 80% Intermediate French Provision Study". The impetus for this research study grew from the school district personnel's desire to know whether French oral and literate competence are enhanced in the 80% programme. They also wanted to know whether students' English literate proficiency in the 80% programme compares favorably to students' English literate proficiency in the more traditional 50% programme. Further, school personnel and parents wanted to know whether students' proficiency in Mathematics is comparable when the subject is taught in French and English. University researchers, on the otherhand, were particularly interested in the effects of intensified second language experience upon first language
literacy proficiency, and in the role that metalinguistic knowledge might play in accounting for any relationship discovered between "increased" intensity and both first and second language literate proficiency.

The policy implications resulting from this study are reasonably clear for school officials who require persuasive evidence of the benefits of one model of French immersion programme delivery over another. From a theoretical perspective, this study provides an opportunity to further our understanding of the conditions for bilingual proficiency. Of further importance, this study permits researchers to explore the effects of bilingualism on first language and aspects of academic achievement. Other strands of scholarship addressed in the study involve investigating the relationships between bilingualism, language awareness and metapragmatic knowledge. The proposed programme of research, therefore, investigates the extent to which school age children in the intermediate years of the French immersion programme have acquired not only linguistic and basic mathematical proficiency in the two languages of instruction, but also increasingly explicit understanding of the processes and features of linguistic communication itself. The study asks whether any advantage of the more intense bilingual programme can be attributed to awareness of language and communication.

All 81 pupils who entered the fourth and fifth grades respectively of the single-track French immersion school participated in the study. The younger group followed the newly introduced 80% French, 20% English language programme, while the older group followed the previously used 50% French, 50% English language programme. Cohorts were tested yearly for proficiency in French and English reading and writing,
and French communicative competence at the end of grades four through seven. A measure of discourse awareness was administered from grades five through seven along with a measure of mathematics achievement in grades six and seven. Yearly questionnaires assessed pupils' attitudes toward learning French and English respectively. Pupils also completed self-assessments of their proficiency in the two languages of instruction each year.

The scope of this thesis will be limited to one aspect, albeit important, of this extensive research project of the relationship between the intensity of second language immersion and biliterate proficiency. In order to study the effects on biliterate proficiency, the grade four students, the treatment group, were compared each year until grade seven to the grade five students, the control group. This longitudinal study includes both within group and between group comparisons over a four year period.

This thesis addresses the following specific research question:

**What are the effects of increased intensity of second language immersion instruction in the intermediate years upon literate proficiency in the first and second languages?**

For the purposes of this study, *literate proficiency* is defined as students' reading and writing in French and English (hence the name *biliterate proficiency*). Measures of French communicative competence, student attitudes, student self-assessments and assessments of awareness of language and communication will be analyzed and discussed within the larger study - "L'Ecole Jules Quesnel 80% Intermediate French Provision Study". For example, the analysis of awareness of language and
communication has been undertaken by Reeder and Takakuwa (Reeder & Takakuwa, 1998; Takakuwa, 1999). The effects on students' academic achievement in Mathematics is under investigation by Bournot-Trites (1999).

The purpose of the next chapters is as follows. Chapter Two provides an overview of relevant theory and research related to the research problem and concludes with the rationale for the proposed research question and a set of hypotheses. Chapter Three describes the method and measures of the study. These include descriptions of the participants and setting, the school programme, the implementation of the innovation, the sampling and design plan of the study, and the data collection for the literacy measures. Chapter Four presents the results of the data collected. These results are discussed in Chapter Five in light of the hypotheses presented in Chapter Two. A summary concludes this chapter. Finally, on the basis of results, conclusions are discussed and implications are considered in Chapter Six.
CHAPTER TWO

RELEVANT THEORY AND RESEARCH

The primary factor in the attainment of proficiency in French... is the amount of instructional time provided.

(Carroll in Swain, 1981:276)

In general, previous studies suggest that the level of French language skills achieved is a function of, among other things, amount of time spent in learning the second language.

(Halsall, 1989:3)

An assumption which has been important in the development of French immersion programmes in Canada is that the more time students spend studying in a second language, the higher will be their level of proficiency in that language. What exactly is the relationship between intensity and biliterate proficiency? There is a second yet equally important question pertinent to this discussion of relevant theory and research: Why is there a relationship between intensity and biliterate proficiency? These two questions will serve to guide this literature review. Its purpose is to shed light not only on the pedagogical significance of this study but also on its theoretical significance.

The first part of this review will examine empirical studies that have explored the effects that intensity of L2 instruction has had on L2 proficiency. Following this, empirical studies that have measured the effects of L2 instruction on L1 proficiency will be reviewed. Moving from empirical studies that attempt to explore the relationship between intensity and biliterate proficiency, a theoretical review will identify developments in the field from theorists who have attempted to explain this relationship. Other components reviewed in the literature include the selection of instruments utilized in the study as well as validity and reliability issues associated
with the use of student writing samples and the various methods of evaluating student writing. In light of these reviews, this chapter concludes with a multi-faceted rationale for this study.

A. THE ORIGIN OF THE EARLY FRENCH IMMERSION PROGRAMME

To begin this discussion on the effects of the intensity of L2 instruction on L2 proficiency, it's useful to have an understanding of the model of instruction of the early French immersion programme at its inception. This will provide the historical background which has influenced the current model in place in most French immersion schools today.

The original French immersion programme began in the St. Lambert area near Montreal in 1965. The St. Lambert parents successfully persuaded their school district officials to offer a more intensive second language programme. The decision to implement this programme during the early elementary grades in contrast to later grades was based on neuropsychological, psycholinguistic and social psychological theories of the time. Parents were seeking an alternative to the traditional core French programme which emphasized teaching students about the language where little emphasis was placed on communication. This programme was generally taught in forty minute periods ranging from two periods per week to daily lessons. It is important to note that the basic pattern regarding instructional time, characteristic of many early total immersion programmes, evolved as Lambert's team from McGill University
became involved in the systematic evaluation of the 'experiment' in the form of a longitudinal study; "decisions about subsequent grades would depend on the results of careful examination of the progress made by the children after first grade" (Lambert and Tucker, 1972:4). The St. Lambert experiment was initiated as an early immersion programme that involved 100% French instruction in kindergarten and grade one, after which one period of English Language Arts was introduced in grade two and the proportion of English instruction was subsequently expanded in successive grades to include other subjects like Mathematics or Science until about half the day was spent working in each language by grade five. From grade seven through twelve, approximately forty percent of the time was spent working in French. This was accomplished by teaching through English in the morning and through French in the afternoon of each day. This programme has continued to serve as the model for other early immersion programmes, the only significant change being that currently in most programmes the introduction of English is delayed until grade three or four.

B. WHAT MAKES IMMERSION EDUCATION EFFECTIVE?

Krashen (1984:61) claims that French immersion is "the most successful program ever recorded in the professional language teaching literature". Reviews of the literature which highlight empirical studies that have explored the effects of immersion on both second and first language skills follow. However, it is important to differentiate the characteristics of immersion from other second language programs as a way of clarifying the effectiveness of French immersion programmes.
French immersion is a form of bilingual education in which students who speak the language of the majority population receive part of their content instruction through the medium of a second language and part through their first language (Genesee, 1987). A key goal of the immersion programme is to provide students with functional competence in both written and spoken aspects of French while promoting and maintaining normal levels of English language development. However, since immersion programmes emphasize the acquisition of a second language (L2) in order to perform academic tasks, the acquisition of L2 proficiency is only one of several programme goals. Equally important is ensuring achievement in academic subjects in accordance with students' academic and grade level (Genesee, 1987). For this reason, curriculum and academic expectations for immersion students generally parallel those for students in the English stream.

In terms of intensity (defined in the present study as the number of hours students are exposed to the French language in a school setting), immersion students receive an estimated range of 2,000 hours (for late immersion) to more than 5,000 hours (for students enrolled in a traditional early immersion programme) during their elementary school years. For purposes of comparison, the core French programme is estimated as providing less than 1,000 hours of instruction in French. In French schools (for native Francophones), where 100% of the school programme is delivered in French, the estimated total number of hours is greater than 8,000 hours.

Early advocates of the early French immersion programme believed that one could learn a second language much as one had learned one's mother tongue: first by simply learning to communicate with others, and then by using one's new language
skills to find out about a variety of different subjects (Edwards, 1990). Rather than
immersing English speaking students into the regular French school, the French
immersion programme was designed specifically for Anglophone children. Language
learning in this social context is often referred to as 'additive bilingualism' since
students can add French to their linguistic repertoire without fearing a loss of English
(Lambert, 1984).

C. REVIEW OF THE LITERATURE: The Effects of L2 Immersion
Instruction on L2 proficiency

(i.) Early French Immersion (EFI)

There is a substantial body of research that has looked at the linguistic and
academic consequences of French immersion. The bulk of this research has focused
on programme effectiveness and student outcomes. Major programme evaluation
reports were commissioned by large boards of education which looked at the effects
on both French (e.g. Harley & Swain, 1978; Lepicq, 1980; Carey & Cummins 1984)
and English (e.g. Genesee & Stanley, 1976; Lambert & Tucker, 1972; Parkin et al.,
1987.) language skills. A number of studies have compared the French language
skills of EFI students to those of native Francophone students (Genesee, 1978; Swain
Collectively, these studies indicate that tests of French listening and reading
comprehension have generally yielded levels of performance by immersion students
that are similar to those of Francophone peers at the end of elementary school. It is,
however, generally recognized that the productive second language skills of French immersion students remains behind those of Francophone peers - the most pronounced differences found on measures of speaking and writing. Genesee (1987:191) summarizes: "In general, then, there is the fact that the language development of immersion students is linguistically truncated, albeit functionally effective."

It is important, however, not to lose sight of the primary objective of the programme at the time of its inception: to provide a more effective instructional model (an alternative to core French) that would promote communicative competence. In this regard, the early French immersion programme has been deemed a huge success - "The trial balloon that flew!" (Lapkin, Swain & Argue, 1983) The St. Lambert experiment has become a landmark in French language education not only in Canada but around the world.

Empirical studies have produced consistent results regarding students' French language skills identifying both their strengths and weaknesses. These of course pertain to students enrolled in an early French immersion programme. To further investigate the relationship between intensity and L2 proficiency, examining other immersion models provides some insight into how this factor of time influences student achievement in their L2.
(ii.) Late French Immersion (LFI)

A popular alternative to the early immersion programme is the late French immersion programme. This programme differs from the early immersion model both in intensity and entry point. Students in late French immersion enter the programme in grade six. For the duration of grade six, students receive all instruction in French. In grade seven, 50% of the programme is delivered in French and 50% is delivered in English. Usually, but not always, LFI students are integrated with EFI students at the secondary level. There is a large discrepancy between the amount of instructional time students in EFI receive as opposed to students in the LFI programme. (In most cases almost double.) How then do these two programmes compare in terms of students' French language skills? Studies that include comparisons of EFI and LFI groups have been carried out in Ottawa-Carleton (Pawley, 1982; Lapkin & Swain, 1984; Morrison & Pawley, 1986; Wesche, Morrison, Pawley & Ready, 1986), British Columbia (Shapson & Day, 1984), New Brunswick (Lapkin & Swain, 1985), and Quebec (Genesee, 1983). Swain (1978) also compared EFI, LFI and partial immersion. Whenever the contrasts have revealed significant differences, the results favoured the EFI students. Some studies have yielded differences in French comprehension. In those studies that included measures of oral expression, significant differences in speaking skills have been found. A substantial number of contrasts yielded no significant differences. In interpreting these results, it is important to recognize that although there is a significant difference in the intensity of the programme delivery, there are also other factors which may influence students' achievement in the LFI programme. Because students in the LFI programme are
older at the entry point of their immersion experience, it may be that older learners are more efficient in some aspects of second language learning than younger learners. This is evidenced by Swain's (1981:1) finding that although the performance of the EFI students was superior to that of LFI students on a test of French listening comprehension, the performance of the LFI students was superior to that of the EFI students on a French reading comprehension test. It has been suggested (Genesee, 1991) that this is so because older learners are more cognitively mature. Second, the LFI students tend to be self-selected for the programme according to motivation and previous school achievement which may indicate a greater commitment and aptitude to language learning. By contrast, parental motivation is the sole determinant of entry to an EFI programme. For students in the LFI programme there may also be advantages associated with a well developed first language - especially literacy. Older learners will have already mastered the skills of reading and writing. Therefore, comparisons between these two programmes cannot be made simply based on intensity.

(iii.) Middle French Immersion (MFI)

The middle French immersion programme offers yet another alternative entry point for students. Students enter the MFI programme in grade four after having completed their primary years in the regular English programme. (Students may have received core French as part of their curriculum.) Most MFI programmes begin as total immersion in grade four and becomes a 50/50 bilingual programme by grade five or progresses toward a 50/50 bilingual programme by grade eight. By the end of grade
eight, the total French language instruction time is roughly half that in a typical EFI programme, and comparable to the total instruction time in LFI. Several studies have compared the French language skills of EFI and MFI students (Cziko, 1976; Hart, Lapkin and Swain, 1988; Holobow et al., 1987; Lapkin & Swain, 1984; and Parkin, Pawley & Unitt, 1986; and Parkin, Bunyun, & Unitt, 1988). In one of the two most recent studies, Hart et al. (1988) compared the French skills of grade eight EFI and MFI students in Metropolitan Toronto. They found significant differences on tests of French listening, reading, speaking and writing, favouring the EFI group in all cases. According to the authors, the MFI students were especially weak in grammar and syntax when speaking and writing.

(iv.) Comparisons between EFI, LFI and MFI

Based on a review of these studies, the French language scores of EFI students tend to surpass those of MFI students, although not on all measures. By grade six, as evidenced by the most recent studies, the MFI students lag behind comparable EFI students in such areas of French proficiency as listening comprehension and the use of verb tenses. French reading comprehension seems to develop quickly in MFI. This may be interpreted as transfer of acquired reading skills from the first to the second language.

As in the case of LFI, results of empirical studies which compare MFI students' performance with EFI should be interpreted with caution because of the difficulty of comparing EFI, LFI and MFI groups. Admission to MFI involves greater weighting of previous school achievement and of teacher input whereas EFI students are selected
primarily by their parents and LFI students are generally self-selected. In addition, the total number of MFI studies to date is relatively small, so that their findings must be regarded as preliminary.

(v.) Other Relevant Studies

Research studies conducted in other regions of Canada shed some light on the effect of intensity on French language proficiency. In a study of the early French immersion programme in Fredericton, New Brunswick (an Anglophone community), English is introduced in grade four and remains at a constant 12% of the allotted instructional time from grade four through six. Therefore, a greater percentage of time is allocated to instruction in French (88%). Students showed rapid progress in French Language Arts and the difference between their performance and that of Francophone students had decreased by grade six (Gray 1986).

In other studies investigating the relative automaticity of reading in the second language of immersion students, it was found that students from grade six and nine immersion programmes receiving 70% of their instruction in French as compared to students at the same grade levels in an 'extended' programme receiving 30% of their instruction in French, read individual words with increasing speed as their total exposure to French increased (Carey, 1991).

Comparisons of students' French language skills in the traditional core French programme versus early French immersion (EFI) have already been cited. However, a relatively recent study (Lapkin, Hart & Harley, 1998) looked at intensity of instructional time and L2 outcomes. The purpose of this case study was to investigate the effects
on achievement and attitudes of students in two compact models of core French (FSL). The authors report that there were statistically significant differences favouring the higher intensity group in the areas of French reading and French writing compositions. They concluded that there were indeed some benefits from the eighty minutes daily over a five month period over the 'traditional' FSL delivered in daily forty minute instructional periods.

(vi.) The Plateau Effect

Although the Early French immersion programme has been highly acclaimed both nationally and internationally - its efficacy being substantiated by the preceding literature review - it has not been left without its critics. Hammerly (1989) has been critical of researchers like Cummins, Lapkin, Allen and Swain claiming that they have presented a 'rose-coloured' view of French immersion. He goes so far as to claim that "facts are ignored....[and] misrepresented" (p.777). It seems that Hammerly's focus on accuracy (as opposed to fluency and accuracy) in French language skills (supported by the evidence that seems to indicate that French immersion students remain behind those of Francophone peers), has led him to believe that French immersion simply "doesn't work".

Careful examination of empirical studies reveals that researchers have in fact provided well-rounded descriptions of immersion students' strengths and weaknesses in using French. Halsall (1989), in her extensive literature review, provides insight into what educators identify as a leveling off of students' French language skills:
The literature provides some suggestions that second language acquisition by EFI students tends to reach a plateau, and their second language errors tend to fossilize, as of Grade 4. (p. 3-6)

Similarly, Cummins (1987) states clearly in his discussion on the application of theoretical principles to immersion principles that "research does not present a totally positive picture of French immersion programs" (p.200). He refers to the problem that French immersion students experience around the grade three level where they "appear to reach a plateau in the development of their French skills, at least as far as grammatical competence is concerned" (p.200).

This study attempts to address this *plateau effect* by exploring how increased intensity in L2 instruction may affect what educators and researchers have observed.

**Summary**

Empirical studies reviewed seem to confirm the positive correlation between intensity of L2 immersion instruction and L2 proficiency. However, it is important not to lose sight of the complexity inherent in second language learning. There are many factors involved, time being but one.

As previously discussed, older learners in LFI programmes seem to learn almost as much and in some cases more than younger learners from the EFI programme despite a significant difference in the amount of exposure to French. It is evident that language proficiency cannot be reduced to a single factor such as time. Genesee (1987:195) offers the conjecture that "the psycholinguistically most
significant aspect of language development in immersion depends on the implicit language curriculum. Pedagogy is another important factor that influences student outcomes. Similarly, the sociocultural context in which the immersion programme operates also needs to be considered. However, this is not to undermine the role that intensity plays. Empirical evidence validates the underlying assumption regarding intensity that has been characteristic of French immersion programmes since their inception. Although intensity is not the only factor in determining L2 proficiency, the number of hours of instruction must be recognized as being a relevant educational variable. For a recent review of the topic of intensity in second language teaching and learning, the reader is referred to Reeder (in press).

D. REVIEW OF THE LITERATURE: The Effects of L2 Immersion Instruction on L1 Proficiency

The St. Lambert parents who advocated for the EFI were optimistic and confident that their children would acquire a higher level of French proficiency in this model than in the core French programme. However, the effects that this instructional model would have on their English language skills were unknown. Critics at the time were quick to predict that not only would students' English suffer but so would their academic development. Because of these concerns, these issues were addressed by virtually all investigators of EFI programmes. Beginning with the earliest evaluations conducted by Lambert and Tucker (see Lambert & Tucker, 1972), consistent results have found little evidence of retarded native language skills (mainly on the basis of
test scores), cognitive development, or scholastic achievement. Based on a decade of empirical research carried out by the Bilingual Education Project at the Ontario Institute for Studies in Education, Swain and Lapkin (1982) reported that there was no long-term lag in development of English proficiency in EFI programmes. Moreover, they often found that some English skills were higher for learners taught in French than in their mother tongue. These advantages have been observed in the area of grammatical usage, punctuation, vocabulary, and reference skills. Further evidence of an immersion advantage in the grammatical domain is provided by Tremaine's (1975) finding that intensive exposure to French in an immersion programme facilitated the comprehension of certain English syntactic structures.

Harley, Hart and Lapkin (1986) in a study that attempted to investigate the effect of early bilingual schooling on first language skills hypothesized "that early bilingual school will serve to enhance certain L1 skills among majority children" (p.295). In their summary of results from the Canadian Test of Basic Skills (CTBS) they indicated that "there is a consistent tendency for the immersion mean scores from grade 3 on to be higher than those of the regular program students on almost all CTBS measures" (p.305). The theoretical aspect of these findings along with results from the aforementioned studies is discussed in greater depth in the second half of this chapter.

(i.) Early French Immersion (EFI)

Most studies have found a consistent pattern of results. Typically, some English language lags are found in grades one to three. For example, first graders who have not yet been taught to read in English obtain lower scores on an English...
reading test than those of children in an English language grade one programme. The same reasoning applies to the finding of relatively lower EFI scores on certain other language skill measures (e.g. Spelling) prior to grade four. In all cases, and independent of the proportion of English instruction time introduced into the EFI programme from grade three on, these observed lags disappear by grade four or five. Genesee (1987) further finds no evidence that increased use of English during primary grades of school in response to partial or delayed French immersion instruction yields greater English proficiency than that seen in early "total" French immersion programmes. There is in fact no evidence that increased use of English during the primary grades of the EFI yields greater proficiency in English. This perhaps explains why it was decided to delay formal instruction of English until grade three or four. (The St. Lambert experiment formally introduced English in grade two.)

(ii.) Late French Immersion (LFI)

As one might expect, it has generally been found that the LFI programme has not had detrimental effects on students' performance in English as they have been enrolled in the regular English programme from kindergarten through to the end of grade five. Studies of late immersion programmes have yielded results comparable to those from EFI programmes with regard to their achievement in English. A study by Shapson and Day (1982) found that when they compared three grade six late immersion programmes with varying amounts of instruction time in French, and whose students had different French language backgrounds, that there were no significant differences in English achievement, either in grade six or upon follow-up in grade
seven.

(iii.) Middle French Immersion (MFI)

A potential strength of the MFI programme is that it provides a standard English language curriculum prior to grade four. Therefore, it avoids the temporary English language performance lag observed in the early grades of the EFI programme. Given the strong English language foundation of the MFI programme, no detrimental effects in this area have been reported when comparing the students performance to standardized test norms.

An interesting finding by Hart, Lapkin and Swain (1988) in a study of EFI and MFI programmes revealed that EFI students were in fact stronger than MFI peers on the reading and vocabulary subtests of the Canadian Tests of Basic Skills (CTBS), grades five to eight. This apparent advantage in L1 skills occurred despite the EFI students more limited training in English. The authors' contention that early immersion education may actually enhance English language learning over the long term is central to the theoretical component of this study.

(iv.) Other Relevant Studies

One of the most interesting and significant empirical studies regarding the effects of intensity of L2 instruction on L1 proficiency comes out of New Brunswick. The results of an evaluation of the EFI programme in Fredericton, New Brunswick (referred to earlier), looked at the impact of an alternative instructional time model on students' French language skills but as well as their English language skills. In this study, English was introduced in grade four and the proportion of time devoted to
English remained constant at 12% for grades four through six. The results indicated that three hours a week of instruction in English Language Arts seemed to be sufficient to enable the immersion students to acquire academic skills that were equivalent to those of the students of comparable ability who were educated completely in English (Gray, 1986).

In order to maintain a high level of validity and reliability, the majority of testing that was conducted for the large scale studies of French immersion utilized standardized tests. A longitudinal study conducted by Harley, Hart and Lapkin (1986) is a case in point. The purpose of this study was to study the effect over time of early immersion education on individual students' L1 skills. A comparative approach was used, involving a matched sample of immersion and regular English programme students selected from the files of the Bilingual Education Project. Two standardized tests were selected as instruments: the Metropolitan Achievement Tests (MAT) and the Canadian Test of Basic Skills (CTBS). The longitudinal findings are, as one might expect, in general agreement with the cross-sectional findings of the Bilingual Education Project; the comparison over time of the CTBS scores of the immersion and regular programme students revealed scattered differences in reading, punctuation, and especially reference skills that were statistically significantly in favor of the immersion students. No significant differences favouring the regular programme students were found from grade three on. It is important to note, however, that as persuasive as this evidence seems to be, the number of 'matched pairs' (immersion students who were paired with students from the regular English programme) varied significantly from test to test. For example, the maximum number was nineteen
matched pairs for tests conducted in grade one and as few as four matched pairs for a test in grade three. Given the relatively small sample size for some of these tests, caution is therefore advised in the interpretation of these results.

Given that these kinds of standardized tests are considered to be indirect measures of language proficiency, how do French immersion students perform on a direct measure of their L1 language proficiency? This was the research question behind an earlier study conducted by Lapkin (1982). She thought it would be interesting to examine writing samples in some detail to look for possible differences on a non-standardized task. General impression scoring was utilized (by teachers) to evaluate writing samples written by a cohort of grade five immersion students and a matched group of grade five students in the regular English programme. The descriptive data resulting from the evaluation of these compositions coincides with the English achievement test data for this cohort of immersion pupils. They did not differ statistically from their regular programme comparison group. The claim that the first language skills of immersion pupils do not suffer in comparison with those of pupils in a regular programme is thus further substantiated by the analysis conducted on student writing in this study.

(v.) Validity of Comparisons in Immersion Research

It is important to note that the achievement of the immersion students in English was assessed in relation to that of comparison groups of students in the regular English programme with adjustment made each year for any IQ differences between the groups. Carey (1984), in his reflections on a decade of French immersion,
cautions against any comparison of results when evaluating immersion programmes with regular unilingual programmes because of key variables that tend to characterize immersion programmes and which may influence the results. He emphasizes what some have labeled as an 'elitist selection' of students enrolled in immersion programmes. Parents who choose the French immersion programme for their children generally tend to come from a higher socioeconomic background and/or whom have some level of post secondary education. He also refers to the "hidden curriculum at home" in describing the enriched home culture which he sees as typical of French immersion students:

Consequently, immersion students have traditionally come from more academically oriented homes in which parents display more involvement in their emergent reading and academic achievement both prior to and during school than do parents from 'regular' instructed control homes. (p. 957)

Educational settings, however, are never true experimental settings. In most cases, it seems that researchers involved in conducting empirical studies on the French immersion programme have made every attempt possible to 'match' groups in order that valid comparisons could be established. They accomplished this by controlling as many variables as deemed possible (e.g. IQ, SES, age, gender).

(vi.) Summary

In summary, a number of important empirical studies have substantiated that there indeed exists an interdependent relationship between intensity and biliterate proficiency. Early studies of French immersion yielded convincing evidence that not
only did the immersion model enhance students' French language skills including communicative competence but it also convinced parents, educators and the public that it did not negatively affect students' English language skills. One of the most surprising outcomes from these research studies, was the finding that pupils often scored significantly higher on specific English language skills tested (Swain & Lapkin, 1982). The development of first language skills among native English-speaking students enrolled in EFI has been a source of inquiry for researchers and theorists alike. The theoretical considerations for the finding that EFI students often out perform their matched counterparts in the regular English programme in L1 skills will constitute the second major part of this review. Theories that have attempted to discover why there is a relationship between intensity and biliterate proficiency will, therefore, be explored in this next section.

E. REVIEW OF THE LITERATURE: Theoretical Perspectives

As suggested earlier in this chapter, it has been hypothesized by some researchers (based upon their findings) that bilingualism serves to enhance certain L1 skills among students in the EFI programme. There are several theoretical perspectives which have led experts in the field to believe that there is a positive relationship between intensity of L2 immersion instruction and L1 literate proficiency.
(i.) **Language Awareness**

Some of the most significant contributions to this discussion have been made by Jim Cummins. He purports that bilingualism can positively affect both intellectual and linguistic progress. According to Cummins (1987), a large number of studies have reported that bilingual children exhibit a greater sensitivity to linguistic meanings and may be more flexible in their thinking than are monolingual children. These studies have investigated aspects of children's metalinguistic development, that is, children's explicit knowledge about the structure and functions of language itself.

Harley, Hart and Lapkin (1986) also support the notion that EFI students have accelerated development in their language awareness. These researchers hypothesize from various theoretical perspectives that bilingualism has a positive effect on metalinguistic awareness which leads in turn to enhanced performance on various kinds of L1 tasks. One of their findings, for example, complements those of other studies (Bialystok, 1988) indicating that bilingualism promotes metalinguistic skill in making grammatical judgments in the L1.

Even prior to the inception of immersion programmes, Vygotsky (1962:11) hypothesized that learning a second language in childhood:

facilitates mastering the higher forms of the native language.
The child learns to see his language as one particular system among many, to view its phenomena under more general categories, and this leads to an awareness of his linguistic operations.
It is not surprising that bilingual children are more adept at certain aspects of linguistic processing. Cummins (op.cit.) suggests that in gaining control over two language systems, the bilingual child has to decipher much more language input than the monolingual child who has been exposed to only one language system. Therefore, the bilingual child has had considerably more practice in analysing meanings than the monolingual child.

(ii.) The Threshold Hypothesis

Results from studies that have investigated the direct effects of bilingualism on cognitive abilities, however, are much less conclusive. However, Cummins (op.cit.) contends that the level of proficiency attained by bilingual students in their two languages may be an important influence on their academic and intellectual development. Specifically, he contends that there may be a threshold level of proficiency in both languages that students must attain in order to avoid any negative academic consequences and a second, higher, threshold necessary to reap the linguistic and intellectual benefits of bilingualism and literacy. In order to account for the negative relationship between cognitive functioning and bilingualism that has been observed in studies of minority groups, Cummins has put forward an explanatory threshold hypothesis. The threshold hypothesis builds on the notions of 'additive' and 'subtractive' bilingualism suggested by Lambert (1975). The essence of the threshold hypothesis is expressed by Cummins as follows:
There may be threshold levels of linguistic competence which bilingual children must attain both in order to avoid cognitive deficits and to allow the potentially beneficial aspects of becoming bilingual to influence their cognitive growth. (Cummins, 1979:229)

Although some researchers (i.e. Harley, Hart & Lapkin, 1986) have found some very tentative support from longitudinal studies, it is apparent that considerable further study is necessary before any conclusions can be drawn concerning the existence of a threshold level and its description in operational terms. Because Cummins hypothesizes that this threshold level of L2 competence acts as a prerequisite to the enhancement of the immersion students' L1 skills, it will continue to be an area of interest for researchers in the field as they attempt to define the threshold level and/or to discover the mechanism(s) or conditions responsible for this phenomenon. From this theoretical perspective, this study provides a unique opportunity to investigate Cummin's threshold hypothesis as it relates to intensity of instruction. The design of this study measures the effect on L1 literate skills both in the traditional 50% model and in the enhanced 80% model of the French immersion programme. The degree (if any) to which L1 literate skills are enhanced by greater exposure to L2 will provide insight into this theory on threshold.

(iii.) The Interdependence Hypothesis

Cummins has argued that there are two dimensions of language proficiency that are important to distinguish for educational and theoretical purposes. The first dimension, which he refers to as cognitive academic linguistic proficiency (CALP), are those aspects of proficiency which are related to the development of cognitive and
academic demands made upon students by the educational system. He distinguishes this dimension from basic interpersonal skills (BICS) which, he suggests, refers to cognitively less demanding manifestations of language proficiency in interpersonal situations such as oral fluency, accent and some aspects of sociolinguistic competence. This is an important distinction particularly in light of the early findings of French immersion research which indicated that there were no adverse effects on students' cognitive development or subject-matter achievement. In trying to understand the process of literacy acquisition in a second language, the fundamental yet elusive psycholinguistic issue of transfer has prompted experts in the field of second language acquisition to theorize about the nature and degree of transfer that occurs from one language into another. Cummins argues that because there is little relationship between the amount of instructional time through the majority language and academic achievement in that language (as evidenced by consistent results in large scale studies of French immersion research), that the first and second language academic skills must be 'interdependent'. The strongest case for transfer of language skills is found in Cummin's (1981) interdependence hypothesis which states:

To the extent that instruction in Lx (i.e., Language x) is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or environment) and adequate motivation to learn Ly. (p.29)

Cummin's claim is that there is a common underlying cognitive/academic proficiency (CUP) that is common across languages which allows the transfer of literacy-related skills across languages. Therefore, learning to be literate in a second language may be affected by literacy capabilities in the first language. However, Cummins also
suggests that this transfer capability emerges only after individuals attain a threshold level of proficiency sufficient to permit cognitively demanding language use. The parameters of this study provide a distinct opportunity to discuss Cummins' theory of the interdependence principle.

(iv.) Transfer: Alternative Theories

The issue of transfer has become somewhat contentious in the field of second language acquisition. Although there has been considerable support for Cummin's interdependence principle [i.e. Cummins (1979), Harley, Hart & Lapkin (1986)], there have also been a number of alternative theories proposed which do not support Cummin's interdependence hypothesis. Eisterhold (1990) reviewed three possibilities to account for the transfer of literacy skills across languages based on the work of Cummins (1981), McLaughlin (1987), Carson et al. (1990) and Freedle (1985). First, he cites Cummin's threshold hypothesis (discussed previously) as one possibility for transfer: "[t]here exists a common underlying proficiency with a threshold level of language proficiency that allows skills to transfer" (p.98). The second possibility he suggests is based on Carson et al.'s (op.cit.) work in a study where they found evidence that writing ability does not transfer easily from first to second language. Carson et al. claim that this finding calls into question Cummins' generalization that reading and writing are skills that transfer easily and behave similarly. Based on this work, Eisterhold proposes a second possibility for transfer: "[t]here exists an underlying proficiency and a cognitive restructuring that allows skills to transfer" (p.98). Freedle also disagrees with Cummins' interdependence hypothesis, making a case against
automatic transfer of skills by taking the opposite perspective that the task of the language learner is to synthesize language skills that originate as separate entities. According to Freedle, there is no automatic transfer of skills from one domain to another. Rather, he contends that language subsystems are represented separately. He claims that this implies separate access to underlying cognitive skills. Freedle hypothesizes a cognitive barrier between language use across varieties and across language modes. Eisterhold summarizes Freedle's theory as a third possibility for the transfer of literacy skills across languages as follows:

[T]here exists separate language systems with a cognitive separation of language skills. Transfer occurs at the point where two previously separated but structurally similar language routines come together. (p.98)

F. REVIEW OF THE LITERATURE: Instrument Selection

As described in Chapter 1, the parameters of this thesis are limited to assessing the effects of an enhanced French programme on biliterate proficiency. Specifically, data was collected for the purpose of assessing students' reading and writing in French and English.

In selecting instruments to measure French literacy skills, two lists were surveyed: Lapkin et al's (1984) annotated list of French tests and the more recent list from Lapkin, Argue and Foley (1992). The criteria in rough order of importance for
selecting tests for consideration included:

• appropriateness to the curriculum (preferred practices in the field) of test objectives (a preference was given to four skill tests, and communication over isolated skill tests),
• developmental appropriateness,
• availability,
• time necessary for administration and scoring,
• costs of administration and scoring,
• availability of useful comparative data against which the results could be interpreted,
• comparability of content tested (i.e. comprehension); and
• some comparability across languages in the case of the reading and writing measures.

All recommended tests considered and selected were designed for early French immersion students. Following a careful analysis of the options, it was found that there was no single test or package that was uniformly high on all these considerations.

G. REVIEW OF THE LITERATURE: Evaluating Students' Writing Proficiency

Writing assessment has long been considered problematic. Researchers have struggled with the development of methods able to produce reliable and valid means of assessing writing quality. An extended review of the issues of validity and reliability as they pertain to the assessment of student writing will provide the rationale for the
decision to utilize a holistic scoring system to assess student writing samples in this study. Because of the controversial nature of the assessment of student writing, an extended review is necessary to fully discuss relevant issues which influenced the decision making in the selection of the writing measures and their scoring.

For the past several decades, researchers have struggled with the development of methods able to produce reliable and valid means of assessing writing quality. Part of this dilemma rests on the limited notion of writing proficiency as merely a set of skills. As White (1984:151) states, "such skills as accurate spelling or clear footnotes or any set of subskills unrelated to thinking - do not constitute writing proficiency itself". In many classrooms, from elementary language arts through university courses in composition, curricula and assessment have focussed on the aspects of writing that are easiest to identify and measure: grammar, syntax, usage, mechanics, punctuation and spelling. A general shift in focus from writing product to writing process in research and classroom practice has had a profound effect on assessing writing away from indirect measure to more direct measures. The underlying assumption of direct assessment is based on defining writing as an 'act of social communication'. Cooper (1975:112) suggests that "[c]omposing a piece in any mode is a complex, linguistic, experiential, cognitive, affective and scribal act". In essence, Cooper and Odell (1977:3) argue that writing communicates a 'whole' message with a particular tone to a known audience for some purpose and the 'holistic evaluation by a human respondent gets us closer to what is essential in such a communication than frequency counts of words or sentence elements". It is assumed by Cooper and others in the
holistic camp that frequency and error counts alone cannot accurately reflect competency. In other words, the 'whole' of a piece of writing is recognized as being greater than the sum of its parts at least when it comes to assessing writing quality.

The use of writing samples for assessing writing has become particularly appealing for competency testing. The student is asked to demonstrate directly (thus the label "direct measure") the skill rather than relying on more indirect 'objective-type' items designed to test skills assumed to be related to good writing. Although such skills as knowledge of grammar and punctuation rules may be important aspects of writing, most experts, as Prater and Padia (1983:20) claim, "demonstrating application of these rules in a written product is the best criterion of competency". When the success of writing is dependent upon the overall effect of all these features, the evaluation procedure is said to be holistic.

(i.) **Validity: Holistic Scoring**

Validity is a technical term in the field of educational assessment and in scientific measurement in general. Purves (1994:1308) defines validity as "the empirical evidence for the appropriateness, meaningfulness, and usefulness of the specific inferences made from an evaluation instrument or procedure". One can conclude based on this definition then that an instrument or procedure for evaluating writing proficiency has high validity if it measures the skills, knowledge and control of strategies that comprise writing ability. The direct measure of students' writing samples elicited as authentic tasks must, therefore, be recognized as having high validity in the context of this longitudinal study.
There are, according to Huot (1990), three predominant scoring strands which are all labeled as being 'holistic':

• general impression scoring,
• primary trait scoring, and
• analytic scoring.

As each strand carries benefits and limitations in the assessment of student writing, each one will be briefly described and their validity and reliability discussed. Highlighting both their advantages and disadvantages will provide insight into the selection and rationale for the scoring of student writing samples used in this study. It is important to keep in mind that despite the differences of the three scoring systems, all holistic evaluation is concerned with an overall impression of how well a writer communicates ideas in response to a particular task.

**General Impression Scoring**

The analysis of the three scoring systems begins with the one utilized in the study. *General impression scoring*, developed by the Educational Testing Service (ETS Quality Assurance Free-Response Testing Team, 1987; White, 1985), is one of the most widely used holistic evaluation strategies. White (1985) contends that general impression scoring has become a standard practice "because a rater's general impression links holistic scoring to recent developments in linguistic, composition and critical theory" (p. 18-19). It is recognized as being the simplest of the procedures in this overview of evaluation strategies. It requires no detailed discussion of features and no summing of scores given to separate features. General impression scoring involves reading pieces of writing for an overall or 'whole' impression of
writing by at least two readers. Raters assign the sample a score point value. (For the purposes of evaluating student writing samples in this study, a four point rating scale was utilized.) Samples are evaluated relative to one another rather than against specific criteria. Often anchor papers are used to illustrate different levels of competence. As White (1994:231) points out, "the major theoretical difficulty with general impression scoring emerges from the limitations of the single score". The lack of detail does not provide diagnostic information. The information about a student's specific strengths and weaknesses is not readily available nor is detailed feedback to the student available. This limitation was not deemed as being of major concern in the parameters of this study as the researchers were interested in group results as opposed to individual results over time. Very large scale writing assessments like those conducted by the National Assessment of Educational Progress (NAEP) have in at least one of their studies (Applebee et al., 1986) assessed over 90,000 writing samples using this general impression scoring system employing either a four or six point rating scale. Because general impression scoring generally takes raters about two to three minutes to score each sample, it has proven to be the most economical of all direct writing procedures (Bauer, 1981). The time factor was an important consideration for the research team given that over the course of this four year study that, in total, approximately 1,300 writing samples were assessed by teachers involved in the study.

In this analysis of general impression scoring, it is important to acknowledge what Kemp (1991) refers to as the "dark side" of holistic scoring. First he identifies the "flip side of efficiency". By this he is referring to the actual administration of the
procedure whereby students may or may not receive the same treatment in terms of introducing the prompt to elicit writing. Training sessions (as described in Chapter Three) were designed to help minimize any inconsistencies in the administration of the writing tasks in this study and attain a standardization of measurement. Another weakness which has some bearing on this study is the problem of interrater reliability. Although teachers received annual training on using the scoring system, the teams of teachers who worked together to score writing samples varied from year to year. This may result in teams of raters who vary in their scoring practices that may either glorify content and virtually ignore the problem of form or, vice versa. Although training and the use of anchor papers can reduce this possibility, it is a limitation of general impression scoring. In the context of this study, there may also be problems related to using the results to measure growth because there is limited information conveyed in the single score exacerbated by the limitations of a four point scale. This potential threat to validity exists because comparisons are based simply on group means of the writing measures over time.

**Primary Trait Scoring**

*Primary trait scoring* is like general impression scoring since it yields a single score for student writing to a set topic. However, a primary trait scoring guide seeks to describe not the overall quality of the writing but rather the variations in quality for the single trait of concern within a single piece of writing. (Examples of traits evaluated might include coherence, creativity, etc.) Writing samples are, therefore, evaluated against specific criteria. A unique quality of primary trait scoring is that the scoring guides are constructed for a particular writing task. The NAEP has also used primary
trait scoring to evaluate student writing samples in large scale assessments. However, because of the time (one to two minutes per trait) and resulting high cost, primary trait assessment has been recommended for small samples (Spandel and Stiggins, 1981). The possibility of threats to internal validity as identified in the analysis of general impression scoring also exists in this scoring system.

**Analytic Scoring**

Analytic scoring focuses on the prominent features or characteristics of writing in a particular mode. These qualities of 'good' writing are identified, and a paper's quality is judged by how many components of 'good' writing it contains. White (1994:232) contends that analytic scoring in fact "reverses the holistic assumption that the whole is greater than the sum of its parts". Readers score individual subskills such as spelling, sentence structure, etc. Those scores are then added to provide a total score. In theory then, analytic scoring should provide the diagnostic information that general impression scoring lacks. After all, analytic scores can be used for many purposes by researchers, teachers and students. However, in practice White (1994:233) identifies three major problems which restrict analytic scoring to small projects with very few readers:

1. There is not agreement about what, if any, subskills exist in writing,
2. Reliable analytic writing scores are extremely difficult to obtain because of this lack of consensus about the definition and importance of the subskills, and
3. Readers must make decisions about each piece of writing, so that scoring is slow and thus the cost is high.
(ii.) Reliability

It is common knowledge among students and teachers alike that the evaluation of writing can be highly inconsistent. The unreliability of procedures in the assessment of writing has plagued researchers for a very long time. In fact, a number of researchers (White, Huot and Hogan and Mishler, among others) have commented on the notorious early unreliability of essay scoring. Paul Diederich's *Measuring Growth in English* is often cited to show the potential for reader disagreement (Diederich, 1974). It is this notion of interrater reliability which has been problematic in the direct assessment of writing. The findings of Diederich, French and Carleton's (1961) study indicate that the median correlation between readers of over three hundred samples was .31. It can be suggested that the Diederich findings accurately represent the unreliability of writing assessment in general. However, since Diederich's study, and to some degree because of it, researchers and practitioners have been interested in examining the conditions in which this study was conducted. A number of studies have shown (Cooper and Odell, 1977 and others) that "when the proper conditions are met [in holistic scoring] interrater reliability of .80 or above can be achieved" (Hogan and Mishler, 1981:11). Key to Diederich's original study is that scoring sessions were described as 'unstructured'. Researchers have found that reliability can be improved to an acceptable level when raters from similar backgrounds are carefully trained. Cooper and Odell (1977:18) cite a study conducted in 1934 where a researcher demonstrated that rater reliability could be improved from a range of .30 to .75 before training to a range of .73 to .98 after training. Training means that raters receive directed practice using the holistic scoring guides with sample papers like
those they will score. They are also trained to avoid known types of bias (i.e. handwriting, neatness, format, etc.).

In another study conducted by Follman and Anderson (1987), three different evaluation systems were investigated to determine their degree of reliability. Although the systems analyzed were coded with different names, there are identifiable similarities to the three evaluation strategies reviewed here. Their results indicated that the different systems intercorrelated highly particularly when more than one rater was involved. Despite the previously stated limitations of the general impression scoring, it in fact had the highest reliability coefficient of the three in the study. (The average reliability scores for "Everyman's scale" [the name given to a system equivalent to general impression scoring] ranged from .788 for one rater to .949 for five raters.) This empirical evidence strongly supports the case for the use of holistic scoring as a reliable assessment method of student writing when raters from similar backgrounds are carefully trained.

H. WRITING SAMPLES: Selection of Genres

Having presented a case for the use of holistic scoring of writing samples as a valid and reliable means to assess students' writing skills, what kinds of writing samples were assessed?

Two genres of writing were deemed as being good indicators of student writing: narrative and descriptive. Narrative writing is generally the more developed of the two genres as preschool, primary and early intermediate age children are exposed to ample models of narratives through storytelling and books read aloud. Most reading
programmes (including commercially produced "literature-based" programmes) contain predominantly narrative reading material. This then becomes the predominant model for student writing. Students, therefore, have had considerable 'practice' at composing in this genre by the time they reach grade four. A case can also be made in establishing a link between narrative writing tasks and that dimension of language proficiency which Cummins calls basic interpersonal skills (BICS). As this genre of writing has more to do with communicating ideas using a narrative framework than language related to the academic or cognitive domains, these writing samples may serve as an indicator of students' BICS.

Students generally are, on the other hand, much less familiar with the genre of descriptive writing. There seems to be much less emphasis placed on this genre of writing particularly at the primary level. One, therefore, might expect to see more growth in this style of writing during the intermediate years than in the narrative style. Because of the curricular relevance in that descriptive writing is believed to be related to expository writing (often considered as the first stage in academic writing), any improvements found in this genre could have positive effects on that dimension of language proficiency which Cummins refers to as cognitive academic language proficiency (CALP). Utilizing both narrative and descriptive writing samples (as they relate to BICS and CALP) was, therefore, deemed as being essential to the study.

The collection and assessment of expository writing was considered to be too problematic. The single most challenging aspect of utilizing this genre of writing for the purposes of this study rests on the difficulty of administering a task that could be utilized over the course of the study. Given the wide range of topics in the content
areas (Science and Social Studies), as well as the range of assignments/tasks that teachers utilize to assess students' performance in these subject areas, it was deemed to be too difficult to identify one common task that could be used for comparative purposes in the study. Also, intermediate teachers in the immersion programme tend to be inconsistent in terms of their expectations and weighting of students' French language skills in the content areas. In addition, there would be little comparable data in English as almost all expository writing is done in French.

I. RATIONALE FOR THE STUDY

Cummin's contributions of both the threshold hypothesis and the interdependence principle serve as frameworks for further research. Clearly, as evidenced by a review of the controversy regarding the theoretical issue of transfer, the need for new in-depth longitudinal studies of the relationship between bilingualism and cognitive functioning is evident. By utilizing intensity of instruction as a variable, the outcomes regarding students' proficiency in both L1 and L2 will, by the nature of this four year longitudinal study, provide important insight into furthering our understanding not only about time (intensity) as an important factor in second language learning but also about the theoretical perspectives of bilingualism (notably transfer) reviewed in this chapter. Subsequent differences (if any) between the two cohorts will provide important information for programme evaluation of the two models of instruction (50% and 80%) which in turn will have important implications for programme delivery. Equally important are the theoretical implications of this study.
particularly in light of Cummin's threshold hypothesis and interdependence principle. In summary, the parameters of this study provide a distinct opportunity to discuss Cummins' theory of the interdependence principle.

J. SUMMARY

The main objective of this review of the relevant theory and research is to provide a strong rationale for this study. Its aim is to indicate why and how this study will provide valuable contributions to the field. A review of empirical studies that have explored the effects of intensity of L2 instruction on both L2 and L1 proficiency has been presented. This part of the review is designed to describe the relationship between intensity and biliterate proficiency from a research perspective. The second part of this chapter constitutes the theoretical review that explores the nature of this relationship. It has been noted that Cummins' theoretical and empirical work on cognitive-academic language proficiency and the interdependence principle provides an essential theoretical background to this research study. A significant amount of research has been conducted within the French immersion context which has provided researchers and theorists alike with a unique opportunity to broaden and in some respects alter our understanding of second language learning. However, many unanswered questions remain and many theories remain untested. The scope of this study as described in chapter one is extensive and will ultimately provide valuable insight as we continue to explore and discover the intricacies inherent in bilingualism. As previously noted, there are obvious implications for the way in which immersion
programmes are delivered based on the findings of this study. The theoretical significance of this study cannot be marginalized. The rationale for this study is, therefore, embedded in both the pedagogical and theoretical aspects of this study.

K. HYPOTHESES

The following general set of hypotheses were proposed:

*Given the theoretical considerations presented in Chapter Two, the 80% intensity group will outperform the 50% intensity group each year on the measures of French reading comprehension, French narrative writing and French descriptive writing. The 80% intensity group will perform favorably in comparison to the 50% intensity group on the measures of English reading comprehension, English narrative writing and English descriptive writing.*
CHAPTER THREE

METHOD AND MEASURES

A. PARTICIPANTS AND SETTING

L'Ecole Jules Quesnel is one of two single track French immersion elementary schools in the Vancouver district. The nature of a single track school means that all students are enrolled in the French immersion programme. Some see this as advantageous as it promotes the use of French language whenever possible in the school life of students including assemblies, public announcements, cultural events as well as extra-curricular activities. Because all students are involved in a bilingual programme, Jules Quesnel has an excellent library and resource centre with a very large French collection run by bilingual teacher-librarians. Similarly, the computer lab houses bilingual software which is integrated into the students' programme. The administrative and secretarial staff are also bilingual. These attributes are considered as enriching the French language environment of the school.

Jules Quesnel enrolled (on average) approximately 310 students from kindergarten through grade seven during each year of the study. Because there are no restrictions on the catchment areas for French immersion schools in Vancouver, students come from all parts of the city. However, the majority of students who attend Jules Quesnel come from the school's surrounding area. A local annex feeds into Jules Quesnel at the intermediate level which has helped Jules Quesnel maintain strong numbers at the intermediate level. The large majority of children have an English language background although there are a few students for whom English is
a second language and subsequently, French may be a third or fourth language.
(ESL students constitute less than 4% of the total number of intermediate students
attending Jules Quesnel.) However, in comparison to the typical school profile of most
Vancouver schools, the percentage of ESL students is very much lower. In some
areas of the city (eastside), the ESL population in regular public schools (non-
immersion) is greater than 50% (in the Sunrise and Fraserview areas of Vancouver).
In other locations on the westside of the city, the ESL population ranges from 15 - 35%
(Jericho area).

The community consists largely of single-family dwellings in a middle to upper-
middle socio-economic area. Parental involvement is perceived to be significant
particularly given its westside location, its proximity to the university and the socio-
economic status of the general parent body coupled with the invested interest on the
part of parents (as evidenced by their decision to enroll their children in the French
immersion programme). The proposal to increase the amount of French instructional
time was considered and endorsed by an involved and well informed parent body in
the spring of 1995.

All 81 pupils who entered the fourth and fifth grades beginning in the fall of
1995 participated in the study. The younger group of 45 grade four students followed
the newly introduced 80% French, 20% English language programme (the treatment
group), while the older group of 36 grade five students followed the previously used
50% French 50% English language programme (the comparison group). In terms of
gender distribution, both groups were relatively evenly distributed: in the baseline
year, the control group consisted of a 50/50 distribution of males and females; the
treatment group had a slightly higher percentage of females (53%). Only minor changes in gender distribution occurred during the course of the study because of subject attrition. The two cohorts were tested yearly at the end of fourth through seventh grades for the duration of the study. Full details of the sampling plan appear in Part D.

Descriptive statistics from the fourth grade measures were used to determine the comparability of these two groups.

B. SCHOOL PROGRAMME

(i.) Language of Instruction

In terms of the allocation of instructional time in each language, l'Ecole Jules Quesnel was a typical example of French immersion school modelled after the St. Lambert experiment. French is the exclusive language of instruction from kindergarten through to grade three. As in the traditional model, the intermediate programme consisted of 50% of the programme being delivered in French and 50% of the programme in English. The French component included the following core academic subjects: French Language Arts, Social Studies and Science. The English component consisted of English Language Arts and Math. The language of instruction of the non-academic areas like P.E., Music, Art and Computer Technology depended upon the specialization and availability of staff. Generally, one language of instruction was
employed during the morning and the other during the afternoon. Very often intermediate teachers would "share" two classes whereby one teacher (most often a Francophone) would deliver the French part of the programme to one class in the morning and then switch with another teacher (an Anglophone who taught the English component) to teach the same programme to another class at the same grade level in the afternoon. In this case, the non-academic subjects would be divided between the two teachers depending on their interest and level of specialization. In other cases, a bilingual teacher, capable and qualified to teach both components of the programme, would deliver the bilingual programme to his/her class thus eliminating the need to platoon. Again, depending on the level of specialization and linguistic competence, he/she would decide which of the non-academic areas would be taught in English or French. Table 3.1 lists those subjects (both academic and non-academic) that are taught in English and French as well as those that may vary depending on teachers' assignments vis-à-vis their areas of specialization in each of the programmes described.
TABLE 3.1.

Language of Instruction

<table>
<thead>
<tr>
<th></th>
<th>50% Programme: Jules Quesnel</th>
<th>80% of Core Academics: Jules Quesnel</th>
<th>The “Ideal” 80% Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects taught in French</td>
<td>Les arts langagiers (French)</td>
<td>Les arts langagiers (French)</td>
<td>Les arts langagiers</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>Math</td>
<td>Math</td>
</tr>
<tr>
<td></td>
<td>Social Studies</td>
<td>Science</td>
<td>Physical Ed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social Studies</td>
<td>Music</td>
</tr>
<tr>
<td>Subjects taught in either</td>
<td>Physical Education</td>
<td>Physical Education</td>
<td>Social Studies</td>
</tr>
<tr>
<td>French or English</td>
<td>Art</td>
<td>Art</td>
<td>Art</td>
</tr>
<tr>
<td></td>
<td>Music</td>
<td>Music</td>
<td>Information Technology</td>
</tr>
<tr>
<td>Subjects taught in English</td>
<td>English Language Arts</td>
<td>English Language Arts</td>
<td>English Language Arts</td>
</tr>
<tr>
<td></td>
<td>Math</td>
<td>Information Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Technology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The innovation investigated in this study is based on the implementation of an 80% French programme. The main curricular difference between the two groups was that the 80% French group received their mathematics instruction in French, while the 50% French group took mathematics in English. It is important to acknowledge that the enhanced programme targets 80% of the core academic subjects. Therefore, the only remaining academic subject taught in English is the English Language Arts. From its inception, this was the way in which the innovation was envisioned. Certainly, this is recognized as being the ideal enhanced programme. In this way, French would be recognized as the majority language and would be the dominant language in the school at both the primary and intermediate levels. This certainly would allow for a
"clean" study meaning that the analysis of the results would reflect the effects of a direct 30% increase in exposure to French language instruction. The reality is, however, that the innovation and investigation of this innovation occurred in a school. Beyond the limitations of a quasi-experiment (discussed in Part D) exist all the challenges of implementing change in a school setting. For example (as previously noted), French immersion teachers who are highly specialized in teaching the academic areas of the French component of the programme are not always specialized in other areas. This may ultimately require teachers who are not French speaking to be assigned to teaching these specialized areas of the programme. Although this does not affect the impact of an 80% programme when considering the core academic areas alone, it does mean that in addition to the English Language Arts, more time is allocated to instruction in English. It is important to include in this discussion of the language of instruction the fact that whenever possible, the administrator attempted to assign French speaking staff to teach as many of the non-academic areas in French as possible.

Other complications arise in the implementation of an 80% programme when French immersion teachers (Francophones who received their certification outside of B.C.) are not qualified to teach the English Language Arts component of the programme. Teachers with a full-time contract must then be given another assignment for 20% of the time and another teacher must be assigned this 20% allocation for English. Therefore, from an administrative point of view, teaching assignments, staffing configurations and timetabling further complicate the implementation of an 80% French programme. Table 3.2 serves to identify the linguistic background and
language(s) of instruction of teachers who worked with both cohorts during each year of the study.

### TABLE 3.2.

Linguistic Background and Language(s) of Instruction of Teachers

<table>
<thead>
<tr>
<th></th>
<th>BASELINE</th>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. COMPARISON GROUP</td>
<td>FB</td>
<td>FB</td>
<td>FB</td>
<td>FF&amp;FF (job share)</td>
</tr>
<tr>
<td></td>
<td>FB</td>
<td>FB</td>
<td>AB</td>
<td>AB&amp;AE (job share)</td>
</tr>
<tr>
<td>B. TREATMENT GROUP</td>
<td>AB</td>
<td>AB</td>
<td>FF</td>
<td>FF</td>
</tr>
<tr>
<td></td>
<td>FB</td>
<td>FB</td>
<td>AE&amp;AE (job share)</td>
<td>AB&amp;AE (job share)</td>
</tr>
</tbody>
</table>

Code:
- AE = Anglophone teaching only in English
- AB = Bilingual Anglophone teaching both in French and English
- FB = Bilingual Francophone teaching both in French and English
- FF = Francophone teaching only in French

A school context as the setting for a longitudinal study of this nature presents other challenges such as split classes. In one year of the study, for example, some members of both the treatment and comparison groups were in the same classroom. Although steps were taken to respect the parameters of the innovation particularly in light of the study being conducted, the challenge of delivering two math programmes in two different languages in the same classroom is obvious. Staffing changes must
also be taken into consideration. Although some of the same teachers have been involved with both comparison and treatment groups, there have also been changes over the duration of the study. The instructional strategies, teaching style in general and even the linguistic strengths and weaknesses of different teachers (Francophones versus Anglophones) are variables that have not been controlled. These realities will most certainly have to be considered in the analysis of results.

(ii.) Intensity of Instruction French/English

Table 3.3 summarizes the number of instructional hours in French in the 50%, 80% (of core academics) and the "ideal" 80% programmes:

| TABLE 3.3. |

| HOURS AND PERCENTAGES OF INSTRUCTIONAL TIME IN FRENCH |
|-----------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| 50% Programme: Jules Quesenl | 80% of Core Academics: Jules Quesnel | 80% “Ideal” Programme |
| Primary Years (K-3) | 3,500 | 3,500 | 3,500 |
| Intermediate Years (4-7) | 2,000 | 2,600 - 3,200 | 3,200 |
| TOTAL | 5,500 | 6,100 - 6,700 | 6,700 |
| Percentage of total instructional time | 50% | 65% - 80% | 80% |

Because the differential amounts of exposure to instruction delivered in French is central to this investigation, it is necessary to compare, in quantitative terms, the number of instructional hours in question between the traditional early total immersion programme and the 80% model. This is illustrated in Table 3.3. In both models, the
number of hours of instruction in French from kindergarten to grade three remains constant at approximately 3,500 hours, as these students receive 100% of their instruction in French. In the traditional model, in which students receive a maximum of 50% of their instruction in French, students receive about 2,000 hours of instruction in French at the intermediate level (grades four through seven) for a total of about 5,500 hours during their French immersion experience at the elementary level. By comparison, in the *ideal* 80% model in which students would receive 80% of their instruction in all subjects in French (excluding the English Language Arts which comprises the remaining 20% of instructional time), students would receive about 3,200 hours of instruction in French at the intermediate level for a total of 6,700 hours during their elementary years. This would make for a net increase of about 1,200 hours over the 50% programme. Because of the variability that exists in the teaching of the non-academic subjects (regarding the language of instruction), a precise calculation of the net increase of the 80% (of core academics programme) is difficult to determine. At the very least, because mathematics are taught in French in the 80% model, there would be a net increase of at least 600 hours of instruction in French over the 50% model. However, as previously mentioned, the administrator attempted to assign French speaking teachers to teach the non-academic areas whenever possible. This would mean then, that a net increase of 600 hours is a very conservative estimate and the reality is most likely considerably higher. It is possible, in fact, that the increase in exposure to French in the enhanced model could range from about 600 to 1,200 hours during the intermediate years.
C. IMPLEMENTATION OF THE 80% PROGRAMME

The preceding section described how the teaching of mathematics in French is the major curricular difference between the two programmes of instruction under investigation. With the recently released Math Integrated Resource Package (IRP), it was an opportune time for the staff at Jules Quesnel to familiarize themselves with this recently revised curriculum guide (1995) produced by the B.C. Ministry of Education. During the orientation phase of this document, an increased emphasis on problem solving, probability, and the general application of math skills to the real world were noted. The math programmes utilized in the school at the time - MathQuest 4, 5, & 6 (1986) and Journeys in Math 4, 5 & 6 (1987) - were reviewed by the staff in terms of their alignment with the Ministry's prescribed learning outcomes and recommended learning resources list. Furthermore, the change of language of instruction for math from English to French in the proposed model necessitated the selection and purchase of new learning resources anyway. As the purchase of new resources is of considerable expense (with an approximate first year cost of about $40 per pupil plus the cost of teachers' guides and support materials), this decision was given due consideration both by the intermediate staff and the administration. After having previewed potential resources, the staff selected the newly released French version of the math programme Interactions (1995) to be implemented concurrently with the implementation of the 80% enhanced programme. It should be noted that those students in the comparison group (as well as other intermediate students not involved in the study) continued to use materials either from MathQuest and/or Journeys in...
Math. As the name implies, the teaching and learning activities included in the programme are designed to be interactive in nature. There is considerable emphasis placed on group problem solving. Students are encouraged to work in small groups, discussing and exchanging ideas and strategies as they work to solve problems. Staff and parents fully supported the idea of teaching math in French as conceived by the administrator of the school. They felt that this would be a good opportunity for students to interact with one another in French and that there could be some real linguistic benefits from teaching Math in French. The school personnel strongly perceived that an 80% programme was an innovative way of addressing the plateau effect observed by all stakeholders.

The implementation of a new programme like Interactions, however, requires not only inservice education prior to its use in the classroom but also longer term support that provides teachers with the necessary professional development. Because the underlying assumptions about the teaching and learning of mathematical concepts and skills embedded in Interactions are quite different from the more traditional approach found in other programmes, teachers were faced not only with a change in the language of instruction in math but also with implementing a new way of teaching the math programme.

As noted in Part A of this chapter, the treatment group consisted of 45 students and the comparison group consisted of 36 students at the outset of the study. As the class size maximum (as per the Teachers' Collective Agreement) is thirty pupils at the intermediate level, students in each of the groups were assigned to different teachers each year of the study. The results of each group, however, are an aggregate of the
results of all students at each grade level regardless of their class assignment. Teacher effect is an uncontrolled variable in this study. However, it is an important factor worthy of consideration in the interpretation of results. Given that all students in the study were exposed to a number of different teachers (both Francophones and Anglophones [Table 3.2]) over the course of the four years and that each year the class composition varied, it becomes more difficult to attribute enhanced outcomes (or lack of enhancement) to teacher effect.

D. DESIGN

(i.) Sampling and Design Plan

All 81 students who entered the fourth and five grades beginning in the fall of 1995 participated in the study. The younger group of 45 grade four students followed the newly introduced 80% French, 20% English language programme (the treatment group), while the older group of 36 grade five students followed the previously used 50% French 50% English language programme (the comparison group). In terms of gender distribution, both groups were relatively evenly distributed: in the baseline year, the control group consisted of a 50/50 distribution of males and females; the treatment group had a slightly higher percentage of females (53%). Only minor changes in gender distribution occurred during the course of the study because of subject attrition. The mean age for students in the treatment group in their grade four year was nine years, eleven months and the mean age for students in the comparison
group at the same grade was nine years eleven months in the baseline year of the study (1995-1996). The two cohorts were tested yearly at the end of fourth through seventh grades for the duration of the study. Full details of the sampling plan appear in Figure 3.1.

As noted in Chapter Two, one of the criticisms of the large scale studies of French immersion is that it compares French immersion students with students enrolled in English programmes. One of the distinctive features of this study is a design which allows for both within group and between group comparisons of French immersion students attending the same school. The alternative within group comparisons which are unique to this study attempt to rectify the alleged incompatibility of comparisons whereby the group of immersion students are used as its own control. Results are further compared against a comparison group of French immersion students in the same setting who did not receive the enhanced treatment. Comparisons between these two cohorts would, therefore, appear to be more valid than comparisons made with students in the regular English programme. However, as educational settings do not permit true experimentation in the sense that participants cannot be randomly selected, the quasi-experimental nature of this design allowed for comparisons to be made between two groups where a larger number of variables have naturally been controlled (e.g. SES background).

A longitudinal, two-cohort quasi-experimental design was employed. The school assigned all incoming grade four students as of September 1995 to an 80% French/20% English programme for the balance of their elementary schooling (to the end of grade seven). This group served as the treatment or target group. Pupils in the
50/50 French/English programme. Therefore, pupils entering grade five in September 1995 were identified as the comparison or control group. This design afforded opportunities to address the research questions in two ways: it allowed comparisons to show growth between grades as well as how the two cohorts compared when in the same grade. The sampling and design plan (Figure 3.1) illustrates the design as described.

**FIGURE 3.1**

**SAMPLING AND DESIGN PLAN**

<table>
<thead>
<tr>
<th></th>
<th>Baseline Oct. '95</th>
<th>Year 1 May '96</th>
<th>Year 2 May '97</th>
<th>Year 3 May '98</th>
<th>Year 4 May '99</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment Group (80%)</strong></td>
<td>Grade 3 →</td>
<td>Grade 4 →</td>
<td>Grade 5 →</td>
<td>Grade 6 →</td>
<td>Grade 7 →</td>
</tr>
<tr>
<td></td>
<td>n = 45</td>
<td>n = 45</td>
<td>n = 42</td>
<td>n = 39</td>
<td></td>
</tr>
<tr>
<td><strong>Comparison Group (50%)</strong></td>
<td>Grade 4 →</td>
<td>Grade 5 →</td>
<td>Grade 6 →</td>
<td>Grade 7 →</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n = 36</td>
<td>n = 36</td>
<td>n = 35</td>
<td>n = 32</td>
<td></td>
</tr>
</tbody>
</table>

58
(ii.) **Subject Attrition**

One of the drawbacks of a longitudinal study is the problem of subject attrition. Fortunately, the number of participants in both the treatment and comparison groups was large enough at the outset of the study so that inevitable subject attrition (students moving or leaving the programme and occasional gaps in sampling caused by students' absence) would not pose a serious threat to the internal validity of the study. The following table indicates the number of participants in each cohort during each year of the study, and shows attrition of four participants from the 50% group and six from the 80% group. The parents of one of the participants requested that their child withdraw from the study's assessment procedures but not from the school programme.

**TABLE 3.4.**

<table>
<thead>
<tr>
<th>SUBJECT ATTRITION</th>
<th>Baseline</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>50% Group</strong></td>
<td>n = 36</td>
<td>n = 36</td>
<td>n = 35</td>
<td>n = 32</td>
</tr>
<tr>
<td><em>(Comparison Group)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>80% Group</strong></td>
<td>n = 45</td>
<td>n = 45</td>
<td>n = 42</td>
<td>n = 39</td>
</tr>
<tr>
<td><em>(Treatment Group)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>n = 81</td>
<td>n = 81</td>
<td>n = 77</td>
<td>n = 71</td>
</tr>
</tbody>
</table>
E. MEASURES AND PROCEDURES

In order to address the research question as stated in Chapter One, the research design of the study was created in order to make comparisons of the effects of increased intensity of second language immersion instruction between the two cohorts. Measures of reading were standardized, normed tests, while measures of writing employed original assessments that were developed specifically for this study and scored using holistic or general impression scoring techniques.

(i.) Description and Procedure for Each Measure

Table 3.5 identifies the six literacy measures employed. The general procedure for collecting data is described first. Then each measure is described followed by the specific way it was administered and scored.

<table>
<thead>
<tr>
<th>LITERACY MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>READING</td>
</tr>
<tr>
<td>French Reading Comprehension</td>
</tr>
<tr>
<td>English Reading Comprehension</td>
</tr>
<tr>
<td>WRITING</td>
</tr>
<tr>
<td>French Descriptive Writing Task</td>
</tr>
<tr>
<td>English Descriptive Writing Task</td>
</tr>
<tr>
<td>French Narrative Writing Task</td>
</tr>
<tr>
<td>English Narrative Writing Task</td>
</tr>
</tbody>
</table>
As noted on the Sampling and Design Plan (Figure 3.1.), all baseline data was collected in October 1995. All other data was collected in the spring during each year of the study. Appendices I - III include the schedule of dates utilized for data collection as well as a brief description of each measure and the people responsible for administration and scoring for each year of the study. These schedules include the administration and scoring of the literacy measures utilized in this study as well as other measures employed in the larger study. These schedules were formulated in consultation with the administrator and teaching staff. Staff members were then provided with these schedules at each of the information and training sessions held in the early spring prior to data collection for each year of the study. As most of the measures were administered by teachers, the research team was responsible for ensuring that sets of data were submitted according to the predetermined schedule.

As discussed in part C ("Implementation of the 80% Programme"), the innovation was proposed by the school in the spring of 1995 with the implementation to begin in the fall. Because of the rapid schedule with which the 80% intensity innovation was introduced in the school, it was not possible for the school or the assessment team to undertake pretreatment baseline testing for all measures. This was particularly true for the English reading comprehension measure (the Gates-MacGinitie Test). While other measures were either curriculum based (e.g. the writing measures) or currently being used in the school (e.g. the French reading comprehension test: Barik et al.'s Tests de lecture), the availability of an appropriate standardized English reading measure proved to be more problematic. These were not available to the assessment team until the fall of 1995. However, results from the
test taken at this time would not be considered valid as norms were established for the spring. This could have produced results giving the comparison group a perceived advantage in their English reading comprehension. Therefore, data collected for the comparison group (50%) is limited to grade five and six on this measure.

All writing scores were entered into the SPSS programme (1997) once samples were evaluated by raters. Intermediate teachers at Jules Quesnel were directly involved in rating student writing samples as well as various members of the larger research team (including myself and my supervisor). Raw scores for reading measures in both French and English were converted to standard $T$-scores for purposes of analysis. A graduate assistant to the project was primarily responsible for data entry into the SPSS files and for the file management for these aspects of the study as well as the data entry for other facets of the larger study - "L'Ecole Jules Quesnel 80% Intermediate French Provision Study" - as outlined in Chapter One.

(a.) French Reading Comprehension

Description:

It was decided that the "Tests de lecture" (Barik, Swain & Schloss, 1979) was the closest match to the criteria (listed in Chapter Two) for assessing students' French reading skills.

This series of standardized, normed reading tests is intended for early French immersion pupils and is available for grades two, three, four and five/six. For the purposes of this investigation, the grades three, four and five/six tests were used over
the course of the study. (See sampling for each year of the study: Appendices I - III.)

These reading comprehension tests were designed to measure comprehension and inferential skills. These tests consist of passages adapted from published material or written by a specialist in children's literature. Texts vary in length and type of material treated. Pupils must read the passages and answer multiple-choice questions based on the content. The test battery was developed in the context of the longitudinal evaluation of French immersion and bilingual education programmes in Ontario, carried out by the Bilingual Education Project at the Ontario Institute for Studies in Education. These tests have been standardized. Test statistics and norms are found in the test manual, along with the complete contents of the student tests booklets, administration instructions and answer keys. Comprehension scores are expressed as T-scores (mean = 50; SD = 10).

Procedure:

These tests were administered by the students' teacher. Booklets and answer sheets were provided. Students recorded their answers (by indicating the letter of their selection given four choices) on the answer sheet provided. These were then hand scored by their teachers using the testing manual. Teachers were advised that this data could be used for their own assessment purposes as one indicator of students' reading skills. Teachers were cautioned, however, that this test only targets comprehension and inference skills on short reading passages. Raw scores were recorded on class lists and given to the researchers. These raw scores were then converted to standard T-scores (based on Canadian norms) in order to permit comparisons within groups across years.
(b.) English Reading Comprehension

Description:

In order to make comparisons between students' reading skills in French and English, a compatible test designed to measure the same reading skills in English was sought. The Gates-MacGinitie Reading Test (Second Canadian Edition) (MacGinitie & MacGinitie, 1992) was identified as being the most comparable English equivalent to the Barik et al. Tests de lecture.

The Gates-MacGinitie Reading Tests, Canadian Edition, are survey tests of reading performance. The Canadian Edition is based on the Gates-MacGinitie Reading Test, Second Edition (1978) developed in the United States. Each of the seven levels, which cover grades 1 through 12, includes vocabulary and comprehension subtests. As listed on the data collection plan (Appendices I - III), level D4 was the measure used to assess both cohorts' English reading comprehension in grade four. Level D5/6 was used for both cohorts in grade five and six. The vocabulary subtest utilised in this study assesses students' vocabulary by having students select the correct meaning for a printed word; as a result the vocabulary test for these levels is primarily a test of word knowledge rather than a test of decoding skills. This test contains forty-five questions, each consisting of a test word in a brief context followed by five other words or phrases. The student's task is to choose the one word or phrase that means most nearly the same as the test word. The comprehension subtest measures the student's ability to read and understand passages of prose and simple verse. This test contains a number of passages of various lengths, with a series of questions about these passages. The comprehension
subtests at all levels involve both literal and inferential skills but the percentage of inferential questions increases from 10% on level A to 45% on levels D, E and F. As reported in the test manual, the reliability coefficients for vocabulary range from .85 to .94 and for comprehension from .85 to .92. The manual presents no statistical data on test validity, but it does attempt to establish content validity by explaining how the items were developed to reflect typical school reading programs. Three scores are obtained from this test: vocabulary, comprehension and a total score (vocabulary and comprehension).

To construct the norms, a sample of 46,000 Canadian students was tested. The Canadian edition presents the standard scores as $T$ - scores (mean = 50; SD = 10).

Although three scores were obtained, only the results from the comprehension subtest have been included in this study. Because the Barik et al. *Tests de lecture* do not include a vocabulary subset, only the comprehension results from the Gates-MacGinitie test have been reported here.

**Procedure:**

As with the Barik et al. tests, these tests were administered by the students' teachers. The comprehensive guide provides a standardized format for teachers in the administration of the test which teachers adhered to ensure consistency in administering the test. As suggested in the manual, teachers set aside two separate blocks of time to administer the vocabulary and comprehension subtests. Both subtests were administered during the same week. (See Appendices I -III for
scheduling details.) For the purposes of this study, the treatment group (the grade four students in the pilot year) were administered Level D4 and the comparison group (grade five students in the pilot year) were administered Level D5/6. For each year of the study, students were administered the subsequent levels as prescribed in the Gates-MacGinitie testing manual. (See sampling for each year of the study: Appendices I - III.) As previously noted, we were unable to collect data for the comparison group in their grade four year on this measure. Therefore, between group comparisons are limited to the results from grades five and six on this measure. These tests were scored by a combination of classroom teachers and school district research officers in different years. Raw scores were converted to standard T-scores (based on Canadian norms) for purposes of within group comparisons across years.

Although both of these measures of reading are limited to assessing reading comprehension and/or vocabulary, standardized reading tests are generally considered to be advantageous in the sense that their reliability and validity are well established. For example, the reliability coefficient of the Gates-MacGinitie Reading Test (Second Canadian Edition) for each level used in this study is higher than .9. In terms of validity, the creators of this edition of this test claim that a number of steps were taken to ensure that the tests would be valid for most school programs. These steps are described in detail in the Teacher's Manual (p. 5).
(c.) Descriptive Writing Tasks

In selecting a task for the elicitation of the descriptive writing samples, it was deemed important that the task for the French and English tasks would need to be similar although not identical. It was felt that if students were asked to do the same task in both languages that there would be a risk that students would either simply translate what they had written in one language to the other and/or that they would tire of the same task over time. Given that students were already been given the same task in each language for each of the four years of the study (in order to make valid comparisons over time), it was decided that two different, albeit similar, tasks would need to be created for the elicitation of the descriptive writing samples.

Description:

The descriptive task was a relatively straightforward kind of writing assignment. Teachers were given a 'recipe' for the task including some preteaching tips. Following is a description of the tasks and procedures teachers followed to elicit the descriptive writing samples used in each year of the study.

Procedure:

French Writing Task:

Students were asked to close their eyes and visualize his/her bedroom. They were requested to look very carefully at the image in their minds. They were then asked to think about how they would describe this image of their bedroom to a visiting cousin who would be visiting him/her that summer. The description was to satisfy the cousin's curiosity about what the bedroom looked like. Students were asked to
describe the room that would 'paint the picture' in their mind to his/her cousin using words. As a whole group brainstorm, students made a variety of suggestions (facilitated by the teacher) about the kinds of things that might be included in this description. During the course of this activity, some attention was given to vocabulary development, particularly for French nouns. Once a variety of ideas had been suggested, students were given about five minutes to describe orally to a partner what his/her room looked like. It was suggested that partners could help one another by asking for additional information that would help them clearly 'see' the bedroom. Most students worked independently and spent about twenty-five to thirty minutes completing the written component of the activity. Some assistance was given, however, by the teacher as needed regarding individual requests for vocabulary items. Students were reminded to re-read the description to check for understanding (does it make sense?) and careless mechanical writing errors before turning in the completed draft.

**English Writing Task:**

Students were asked to think about a favorite or very special place for him/her. It was suggested that this could be a place that they had visited once (as in a vacation) or a place that they visit often either alone or with family and/or friends. It could also have been an imaginary place. Some suggestions from the teacher initiated the brainstorm session. Once students had an opportunity to share some of their ideas as a whole group, they were asked to again visualize what this place looked like in their mind. The analogy of 'painting the picture' in his/her mind with words was used again in describing the task to students. A "partner share" allowed students the opportunity...
to exchange their descriptions and to encourage a deeper, more descriptive approach by telling his/her partner about his/her special place. (This was done orally.) Most students again spent about twenty-five to thirty minutes engaged in the written component of the session. Students were reminded to re-read the description to check for understanding ("Does it make sense?") and careless mechanical writing errors before turning in the completed draft.

(d.) Narrative Writing Tasks

Description:

As previously noted in Chapter Two, criteria for the selection of assessments included their appropriateness to the curriculum and their compatibility to the instructional practices in place. Both the narrative and descriptive writing tasks created for the study were deemed to meet both these criteria. Both tasks were designed to complement and enhance teachers' writing programmes and to utilize curriculum based assessments.

The elicitation plan for the narrative writing samples came from the work of two Canadian educators, Brownlie & Close (1990; 1992). Based on their beliefs in collaborative and active learning, they have produced a number of resources for teachers that highlight teaching and learning strategies classified into three groups:

• strategies for connecting new information with known information;
• strategies for processing new information; and
• strategies for transforming or personalizing the new information

The strategy utilized in the elicitation of narrative writing samples -Building from
Clues - falls into the first category. This strategy can be utilized either as a prereading strategy or as a prewriting strategy. As a prewriting strategy, it serves to facilitate the creative process and helps to develop a narrative organizational framework. Further, it motivates students and encourages active participation.

The strategy involves the teacher introducing a series of "clues" to the group. These clues are presented to students in the form of objects (artifacts) that are connected to the plot, setting and/or characters of a text. (In almost all cases, picture books or short novels were used as the literature source for the elicitation of narrative writing samples.) Although the number of artifacts presented may vary depending on the age level and text used, for the purpose of standardizing the procedure for this study, five artifacts were presented for each task. Each student is to create his/her own story which must include as many of the objects as possible. In the form of a whole group discussion, students share their predictions as each new artifact is introduced. This constitutes the prewriting stage. Although the artifacts are based on a "real" book, students are encouraged to be creative as they develop their own stories. This reinforces the idea that there is not one "right" or "correct" interpretation.

Different literary sources were used in French and English. In order to avoid students recreating the same stories each year, a different literature source and thus a different set of artifacts was used. The titles as well as the artifacts used in each year of the study and in each language are listed as follows:
French Writing Samples: Resources

YEAR 1  Un voyage pour deux (1991)
Arthurfacts: a small chest (to represent a trunk), an airline ticket, a toy bucket and shovel, a pirate flag and a lifejacket

YEAR 2  Le chevalier de Chambly (1992)
Artifacts: a princess' hat, a knight's helmet, shield and sword, a bouffon's hat, a dragon (puppet) and a ransom note

YEAR 3  La cite des abeilles (1981)
Artifacts: a picture of a bee, a picture of a butterfly, a doctor's mask, a magnifying glass and a map of Australia

YEAR 4  Le plus long circuit (1993)
Artifacts: a baseball glove, a piece of broken glass, a magic wand, an army hat and a chocolate bar

English Writing Samples: Resources

YEAR 1  The Hockey Sweater (1979)
Artifacts: a boy's hockey skate, a Canadien's hockey shirt, an Eaton's shopping bag, a letter and an envelope

YEAR 2  The Magic Paintbrush (1989)
Artifacts: a paintbox, a crown, a rose, a picture of a tallship, and a red heart cut out of paper
YEAR 3  The Magic Ear (1996)

*Artifacts:* a Japanese doll, a conch shell, a rock painted gold,
a toy snake and a bag of rice grains

YEAR 4  Josepha (1994)

*Artifacts:* an old leather boot, a jackknife, an old fashioned blackboard
with chalk, a Canadian one dollar bill and a photograph of an old
wagon

**Procedure:**

The *Building from Clues* strategy provided the framework for students to create
a narrative writing sample. Prior to beginning the individual written component,
teachers were instructed (during the training session) to do a quick review of a story
grammar to remind students about the elements of storywriting that should be included
(i.e. beginning, middle, end; characters, setting, a problem and a solution to the
problem). Some students completed the written component of the activity in a
relatively short period of time (fifteen to twenty minutes) while others spent up to forty
minutes writing. The final activity in the session was to read aloud the literature
source. Anecdotal reports from the teachers confirm that almost all students seemed
highly motivated to write and they were all curious to know what the 'real' story was
and how the clues related to the story.

This strategy was used to elicit narrative samples both in French and English for
each year of the study.
Procedure for scoring and staff training of the writing tasks:

Both the descriptive and narrative tasks were administered by the students' teachers. In order to maintain consistency in the administration of the tasks, teachers involved in the administering of the selected instruments were given a half day training session. These occurred in early spring during each year of the study, just prior to the annual data collection. During these sessions, the research team worked with the involved staff members to review the objectives of the study and to provide them with a general overview of the data collection procedures. The major portion of each training session, however, was allocated to the elicitation and scoring of writing samples. As the narrative task was a much more complex strategy, considerable time was spent training teachers about its purpose and its administration within the scope of the study as well as its use in other contexts.

As discussed in Chapter Two, training is an important feature of ensuring a high level of interrater reliability. Research findings conclude that reliability can be improved when raters are from a similar background and are carefully trained. Both these conditions were met during the training sessions with staff. Teachers were paired together according to the language of instruction and the grade level they taught. Pairs worked together to rate samples written by students at the same or similar grade level which they taught. A considerable amount of time was allocated to this kind of training during the annual training sessions at Jules Quesnel. During these training sessions, prior to having teachers work in pairs to score sample papers, two of the researchers modelled the process. The sample paper was first read
independently by each of the raters (the researchers in this case) and assigned a score ranging from 0 to 4. It was explained to teachers at this time that a score of four was considered to be an exemplary piece of writing in which the student did a superior job of responding to the particular writing task. On the other hand, one was considered to be a relatively weak, undeveloped piece of writing. Scores of two and three were considered to be middle range. Zero was assigned in only a very few cases when the sample was either illegible or where a minimal attempt was made and judged to be unscoreable. It was emphasized to teachers that when scoring samples, the rating assigned to a piece of writing should be criterion-referenced as opposed to norm-referenced. That is, that the anchor papers (those used in the training sessions) should provide the criteria for evaluation as opposed to comparing students' samples and basing their evaluation relative to the work of other students in the same group. This would ensure that growth could be measured over time. If evaluations are based strictly on comparisons of samples within a group with no reference to the criteria, the results may indicate no change in the group mean over time.

At this initial stage in the scoring, it was explained to teachers that it was permissible to use '2-3', '3-4', etc. which provides the rater with a wider range and helps in the negotiation phase. It was explained that when the papers are exchanged, it is important that the second rater not be influenced by the score of the first rater. Teachers were instructed to write their score on the bottom of an attached sheet and to fold the bottom over a couple of times so it would not be visible. The second rater then reads the sample and scores it according to his/her overall impression. Once the raters have completed the scoring of a set of samples, the scores are revealed. In
cases where the single scores are the same, there is 100% agreement and this stays as the final score. In the case where one rater included a range of two scores (i.e. '2-3') and the other rater scored it as a '2', then the final score for the paper is a '2'. However, if both raters have scored a piece of writing as '2 -3', both raters have to agree and negotiate to arrive at a single score. Teachers were advised that discrepancies of this nature are resolved by discussing the criteria being used until agreement is reached. Teachers were reminded that they may need to consult other samples to help in determining the final score. The process of negotiating when a discrepancy exists was modelled by the two researchers. Following this demonstration, the pairs of teachers who would be scoring together the writing samples for that particular year of the study were given a set of sample papers to score together. As each partnership received the same set of samples, pairs were able to share their results and discuss any discrepancies they had with other pairs. To conclude the training sessions, teachers were provided with a list of important tips. These included guidelines on how to deal with spelling and grammatical errors. Teachers were reminded that the score was to reflect their overall impression of the writing particularly in light of how well the student fulfilled the task. Writing mechanics per se would, at least to a certain extent, affect the reader's ability to understand and appreciate the student's ideas but that these features were to be weighted appropriately. Teachers were also advised to try and rate all writing samples as one set in one sitting. This was recommended to maintain consistency in their scoring. From the comments received by the researchers from teachers involved in these training sessions, it appeared that teachers found it to be a worthwhile and valuable
activity.

The objectives, therefore, of these training sessions were twofold: first, they were integral to the study in order to ensure that there was uniformity and consistency (standardization) in the administration of the task and to ensure reliability in the scoring of writing samples and secondly, these sessions were viewed as a professional development activity for teachers. Expanding their repertoire of instructional strategies as well as their experience with general impression scoring were seen as valuable outcomes for their participation in the study.

(ii.) Analyses

Descriptive statistics (group means and standard deviations) were obtained using the SPSS programme (1997). These statistics were prepared using the data collected from each measure listed in Table 3.5 for both cohorts in grades four, five and six. As has been previously noted, participants in this study could not be randomly assigned and, therefore, this study is considered to be quasi-experimental in nature. Analyses have been, therefore, limited to describing how the innovation affected those students in the treatment group as compared to those in the control group. A strong case can be made for excluding inferential statistical procedures because of the non-experimental nature of the study itself. Inferential statistical procedures (such as ANOVA) are best utilized in experimental settings where equivalency of groups cannot be questioned. Although the covariance approach can be useful in helping to adjust for non-equivalent groups, it is recognized by researchers (i.e. Halsall, 1989) that equivalence of the groups being compared cannot
be guaranteed even when covariates such as IQ are utilized. Furthermore, the writing tasks use a four point scale preventing a normal distribution of the data which is an assumption for conducting inferential statistics. Therefore, the analysis of the data in this study is limited to descriptive statistics. Descriptive statistics may limit the generalizability of comparisons between the two groups to simply describing how the change in intensity affected the biliterate proficiency of the comparison group. Unlike inferential statistics, descriptive statistics cannot be used to predict the similarity of a sample to the population from which the sample was drawn. Although descriptive statistics cannot be used to generalize to the larger population (meaning other immersion settings), they do serve to provide valuable information particularly for comparisons of each group over time in the school in which this study was conducted.
CHAPTER FOUR

RESULTS

As described in part E of Chapter Three ("Analysis"), descriptive statistics were obtained for each of the measures listed in Table 3.5 for both cohorts in grades four, five and six. Standard scores for French and English reading comprehension, and raw scores for the French and English writing measures were organized by group and year. Descriptive results (means and standard deviations) for each measure are presented in Tables 4.1 - 4.6 and Figures 4.1- 4.6. A brief interpretation of results for each measure is included. The relevance of these results to the research hypotheses, as well as the pedagogical and theoretical issues raised in the introductory chapters of this thesis, are discussed in Chapter Five.
(i.) FRENCH READING COMPREHENSION

TABLE 4.1. French Reading Comprehension by Intensity Group and Grade Level

<table>
<thead>
<tr>
<th>Grade</th>
<th>50%</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>X</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>54.50</td>
<td>9.08</td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>51.63</td>
<td>12.06</td>
</tr>
<tr>
<td>6</td>
<td>X</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>52.93</td>
<td>10.76</td>
</tr>
</tbody>
</table>

FIGURE 4.1.

French Reading Comprehension

Both cohorts performed above the test mean (a T-score of 50) in each grade. These results suggest that an initial advantage shown by the 80% intensity group disappeared over the course of the study; the 80% group maintained only a slight advantage over the 50% group in grade six. The difference between the two intensity groups does not appear to be sustained into the third year.
### ENGLISH READING COMPREHENSION:

#### TABLE 4.2. English Reading Comprehension by Intensity Group and Grade Level

<table>
<thead>
<tr>
<th></th>
<th>GR. 4</th>
<th></th>
<th>GR. 5</th>
<th></th>
<th>GR. 6</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>SD</td>
<td></td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td></td>
<td>n</td>
<td></td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>60.00</td>
<td>9.09</td>
<td>30</td>
</tr>
<tr>
<td>60.00</td>
<td>9.09</td>
<td>30</td>
<td></td>
<td>56.70</td>
<td>8.53</td>
<td>30</td>
</tr>
<tr>
<td>60.39</td>
<td>6.54</td>
<td>36</td>
<td></td>
<td>58.64</td>
<td>7.34</td>
<td>36</td>
</tr>
</tbody>
</table>

#### FIGURE 4.2.

Because grade four results for the comparison group were not available, the analysis of students' proficiency in English reading comprehension is limited. As in the French reading comprehension measure, both intensity groups performed in the English reading comprehension measure above the test mean (a T-score of 50). Grade five and six results seem to indicate that both groups were performing about the same with only a slight advantage to the 80% group. Although it appears that students' English reading scores seem to decline over the course of the study, both groups continued to perform well above the test mean throughout the course of the study.
In French descriptive writing, the 80% group performed slightly better than the 50% group, particularly in grade five. There seems to be an advantage for the 80% group on this task. An informal qualitative review of the written compositions revealed that students' writing in general seemed to be more sophisticated. Over the course of the study, their ability to complete the task more creatively and to use greater detail in their descriptions was evident. In addition, it is notable that both groups' scores increased over the three years.
(iv.) ENGLISH DESCRIPTIVE WRITING:

TABLE 4.4. English Descriptive Writing by Intensity Group and Grade Level

<table>
<thead>
<tr>
<th>GR. 4</th>
<th>GR. 5</th>
<th>GR. 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>50%</td>
<td>2.46</td>
<td>2.58</td>
</tr>
<tr>
<td></td>
<td>.86</td>
<td>1.17</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>80%</td>
<td>2.22</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>.98</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>37</td>
</tr>
</tbody>
</table>

FIGURE 4.4.

The results from the English descriptive writing task are quite different from those from the French descriptive writing task. With only a very slight difference noted in grade four favouring the 50% group, both cohorts performed very similarly on the measure of descriptive writing in English. As with the other writing measures in both languages, students in both intensity groups seem to have made good progress during the three years of the study reported here. The reduction of instructional time in English does not seem to be associated with students' performance on this task.
The two intensity groups appear to have performed about equally well during the first three years of the intermediate programme. Between-group comparisons reveal a slight advantage for the 80% group in each year. Both groups are progressing at about the same rate in narrative writing. The differential amounts of instructional time in French and English do not appear to be associated with students' performance on a writing task of this nature.
TABLE 4.6. English Narrative Writing by Intensity Group and Grade Level

<table>
<thead>
<tr>
<th></th>
<th>GR. 4</th>
<th></th>
<th>GR. 5</th>
<th></th>
<th>GR. 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>n</td>
<td>X</td>
<td>n</td>
<td>X</td>
</tr>
<tr>
<td>50%</td>
<td>2.27</td>
<td>.64</td>
<td>2.67</td>
<td>1.06</td>
<td>2.93</td>
</tr>
<tr>
<td>80%</td>
<td>2.03</td>
<td>.82</td>
<td>2.46</td>
<td>.78</td>
<td>3.09</td>
</tr>
</tbody>
</table>

FIGURE 4.6.

Narrative writing results in English are similar to the results in narrative writing in French. Both intensity groups appear to have performed about equally well with a very similar rate of progress in this genre of writing during the three years of the study reported here. The reduced intensity of English language instruction does not appear to be associated with students' writing on this narrative task. The fact that teachers were trained to score against the criteria (see "Procedures for Scoring and Staff Training" - Chapter 3), results in an observed growth between grades 4, 5 and six, albeit small.
CHAPTER FIVE

DISCUSSION OF RESULTS

This study specifically analyzed the relationship between increased intensity of second language immersion instruction in the intermediate years and literate proficiency in the first and second languages. These results provide some insight into furthering our understanding not only about time (intensity) as an important factor in second language learning but also about some of the theoretical perspectives of bilingualism (notably transfer). The rationale of this study was based on both pedagogical and theoretical issues.

The discussion of results will, therefore, focus on the relationship between intensity and biliterate proficiency in light of these results and the stated hypotheses. As well, a review of some of the theoretical issues related to intensity and biliterate proficiency presented in Chapter Two will be included in the discussion of results presented in this chapter.

(i.) The Plateau Effect

The main impetus behind the implementation of the 80% enhanced programme - from the school personnel's perspective - was to overcome a perceived plateau effect which generally seemed to appear during the early intermediate years. There was some evidence for a plateau effect in both groups' French and English reading results. For the writing measures (in both languages) there was no evidence
of a plateau effect for either group. Therefore, the fact that the plateau effect was not observed in the results of the writing measures, does not support for the findings of Halsall (1989) or Cummins (1987) as discussed in Chapter Two, nor does it validate the staff's perception of previous plateau effects. Given that there was little evidence to support a plateau effect for either group and that both groups performed similarly on most measures, it is impossible to recommend one model of instruction over another based on these findings. However, the positive outcome from the French descriptive writing task may have some important implications in support of the 80% enhanced programme particularly in light of its relatedness to academic writing. A more indepth analysis of student writing in these genres should provide researchers and educators with a better understanding for enhancing students' French writing skills particularly those necessary for effective academic writing which are of particular import in the upper intermediate and secondary years of the school programme. In terms of policy implications, it is important to remember that these results are limited to literacy skills and must be considered as only one part of the larger study. These results alone do not provide persuasive evidence that one model is better than another. A thorough and comprehensive assessment of the effectiveness of the 80% enhanced programme can only be formulated when the results of all measures (particularly those from the oral French proficiency measure) which constitute the larger scale study are taken into account.
(ii.) Comparisons of Intensity Groups:

It was proposed in the stated hypotheses that the 80% intensity group would outperform the 50% intensity group each year on the measures of the French reading comprehension, French narrative writing and French descriptive writing. Descriptively, this hypothesis was only marginally supported. Students in the 80% intensity group performed only slightly better than students in the 50% intensity group on all French literacy measures. In French writing (both narrative and descriptive), neither group seems to have been subject to plateau development, but appeared to have progressed slightly upward throughout the three years observed. This comes about despite the likelihood of increasing educational expectations in successively higher grades by the different teachers who assessed their written work. As noted in the literature review on the assessment of student writing, one of the limitations of holistic scoring is that it does not provide an analysis of the subskills inherent to writing. It may be that other measures in the larger study (e.g. the test of communicative competence or a scoring using discourse analysis) will provide more information about students' writing skills in French. The scoring of writing samples in this measure is more analytical in nature than the holistic scoring used in this study which addresses specific aspects of students' writing (i.e. quantity, syntax, complexity, etc.) that were not assessed using the holistic scoring system. Results from this test will be important to include in the final analysis of the effects of an enhanced instructional programme in French on students' French literacy skills.

The second part of the proposed hypotheses included the prediction that the 80% intensity group would perform comparably to the 50% intensity group on the
measures of English reading comprehension, English narrative writing and English descriptive writing. This hypothesis is supported by the data. Descriptively, English literate proficiency continued to progress at a level appropriate to grade despite the relative reduction in instructional time spent in English. Both intensity groups' scores on English reading comprehension remained above the norm published for the tests employed, indicating no risk to English reading associated with reduced instructional use of English. These results seem to complement Gray's results (1986) in New Brunswick where the English component of the early French immersion (EFI) programme was reduced to 12% and students continued to perform favourably in comparison to the control group.

There does not, however, seem to be evidence to support other studies which have found that the EFI programme enhances L1 (Harley, Hart & Lapkin [1986]; Hart, Lapkin & Swain [1988]). However, caution is advised in comparing the results from studies like those conducted by Harley, Hart and Lapkin with the results of this study because of the different measures which were employed. Tests like the Canadian Test of Basic Skills (CTBS) employed by Harley, Hart and Lapkin (1986) are much more analytical in nature than those employed in this study. The CTBS is designed to identify areas of writing such as spelling and punctuation. The general impression scoring utilized in this study, on the other hand, does not assess specific writing skills, but overall quality of the product.
(iii.) Pedagogical Issues:

There are a number of pedagogical issues to consider that may account for the lack of widespread differences between the two groups' performance on the French measures. As previously noted, the main curricular difference between the two cohorts was the delivery of the math curriculum in French for students in the 80% intensity group. There seems to be some question as to how much or whether students "learned" their math in French or in English. It was reported by staff to the researchers that because many parents were concerned about their child learning math in French (rooted in their fear that their child would have difficulty in "switching" to the English math program in high school and therefore be disadvantaged), some made use of the English version of the Interactions textbook at home. Therefore, it is possible that students may have been doing their homework in English and thus, further limiting their exposure to the French language from the math programme. A second consideration for a limited advantage for the 80% intensity group rests on the fact that the increase in instructional time was, at the very least, limited to the instructional time allocated to mathematics. There was no increase in the amount of instructional time to French Language Arts. Therefore, an increase in students' literacy skills could only be anticipated if one achieved transfer across subject domains. This is further discussed in the following section on theoretical perspectives. A third consideration addresses the issue of instructional foci in reading and writing. From my experience in several French immersion schools, there seems to be a tendency in the intermediate years for reading programs to emphasize literature studies as opposed to the direct teaching of reading and study skills. This could at least in part explain a
slight decrease in both groups' performance on the reading measures.

(iv.) Theoretical Perspectives:

The issue of transfer was explored from several theoretical perspectives in the literature review found in Chapter Two. Results from this study seem to provide some support for Cummins' Interdependence Hypothesis. His generalization that reading and writing are skills that transfer easily and behave similarly, seems to be sustained given the results from the six measures in this study. However, the literacy measures that were employed in this study are only part of the larger study that attempts to explore the notion of a common underlying cognitive/academic proficiency (CUP). Because the measures employed in this study do not fully assess students' academic language proficiency (ALP), it would be unwise to suggest that these results can either fully support or refute this hypothesis. They will, however, be useful when considered along with results from other measures employed in other facets of the larger study. It may be that the study undertaken by Bournot-Trites (1999) may have particular relevance in broadening or understanding of ALP in her study which investigates students' academic achievement in mathematics when taught in French.

These results also provide some insight into Cummins' Threshold Hypothesis - at least as it relates to intensity of instruction. It may be that the enhanced programme that was implemented (with particular consideration given to the challenges presented in Chapter Three regarding its implementation in the school programme), was not sufficient for students to attain this theoretical threshold level and thus there were no marked differences in the results on the literacy measures. One can only speculate if
the results would be different if a "pure 80%" enhanced programme had been successfully implemented. Again, this observation may be premature. First, it would be necessary to develop an operational definition of the concept of threshold. Then it would be useful to assess all results from other measures in formulating a conclusion as to the effects of the enhanced programme in question on attaining such a threshold level. Other components of the larger study (particularly the results from the measures which assess students' mathematical achievement) should provide further insight into the academic consequences of intensification of the use of French as a medium of instruction in early French immersion programmes in the intermediate school years.

The results of the English literacy measures provide further insight into Cummins' Threshold Hypothesis as it relates to the enhancement of L1 skills. Cummins hypothesizes that the threshold level of L2 competence acts as a prerequisite to the enhancement of the immersion students' L1 skills. However, it may be that, as previously suggested, the 80% intensity programme as it was implemented at the school was not enough for students to attain this "threshold" in their L2. Therefore, the results can neither support nor refute the Threshold Hypothesis.

(vi.) Pedagogical Explanations:

As with the French literacy results, there are some pedagogical explanations that should be considered in the analysis of these results. There is the possibility that the teachers may have influenced the way in which the English Language Arts, in particular, were taught and thus affected how students may have performed on the
English literacy measures in this study. There may be some advantage to students when each language component is taught by native speakers and/or teachers trained to teach each linguistic component of the programme. For example, teachers who are anglophone and have received training and/or have had experience teaching the English Language Arts programme may positively affect students' performance in English. The same could be said for francophone teachers teaching the French component of the programme. (Table 3.2: - "Linguistic Background and Language(s) of Instruction of Teachers" - is particularly useful in the analysis of teacher effect.)

This study attempted to investigate the effects of an enhanced French language programme on students' biliterate proficiency. The innovation occurred primarily by changing the language of instruction in math from English to French. It must be recognized that there is minimal focus on literacy in math. As described in Part C of Chapter Three, the new math programme which was implemented (Interactions) emphasizes group problem solving which is predominantly oral. While there is considerable merit in enhancing the learning environment where French is enhanced, it may be that there is not a close enough link between math as it is taught in a programme like Interactions to literacy skills that were measured in this study.
(vii.) Summary

The results from the six literacy measures employed in this study have important implications for furthering our understanding for the necessary conditions to enhance students' biliterate proficiency. It seems evident that intensity is an important factor in the attainment of proficiency in French. The question of just how much French actually needs to be used in educationally effective EFI programmes remains unanswered. It appears that although the 80% enhanced programme implemented at L'Ecole Jules Quesnel did not result in significant gains for students' literate proficiency in French (at least within the scope of this study), it did not seem to have a negative impact on students' English literate proficiency given the reduction in instructional time in English. As will be discussed in Chapter Six, there seems to be evidence that suggests that we need to look beyond the variable of time and intensity to issues of pedagogy and curriculum to furthering our understanding of the conditions for bilingual proficiency.
CHAPTER SIX
CONCLUSIONS AND IMPLICATIONS

The present study suggests that while intensity is an important feature in early immersion programmes in terms of students' attainment of biliterate proficiency, there may be pedagogical and curricular factors in addition to the amount of time allocated that need to be considered in promoting L2 learning. With no negative effects on students' English literacy, it seems that no harm was done by reducing the instructional time in English. However, students in the intensified programme did not seem to have benefitted differentially from the enhanced French component whereby more instructional time was spent in the French language. Although these observations are limited to the results from this study, it does provide an opportunity to discuss implications in a broad context regarding the EFI model as it is designed at the intermediate level as well as implications for the school context at L'Ecole Jules Quesnel.

Comparing the model of the EFI programme in the primary years (K - 3) to the intermediate years (4 - 7), it is evident that there is greater emphasis placed on teaching the target language during the primary years and relatively more time and emphasis placed on teaching in the target language during the intermediate years. The curricular content is used as the primary vehicle for promotion of L2 learning beginning in grade four and continuing through the secondary years (Swain & Lapkin, 1982). This occurs because teachers are expected to cover the same curriculum in the EFI programme as the regular English programme. The EFI programme is bilingual during the intermediate years and, therefore, there are two Language Arts
programmes. This means that teachers must integrate a significant portion of the French language arts programme into the content areas like Social Studies and Science because of the limited instructional time available. Very little time is left available for the teaching of French language skills. Therefore, it may be that a limitation of the EFI immersion model is that because of the increased emphasis on content during the intermediate years, that there is less emphasis and time available for the actual teaching of French language skills per se. While academic content may provide a motivation for second language learning, this alone may not provide the necessary instruction to promote the full range of second language skills. The review of the literature in Chapter Two confirms that in general, EFI students' expressive skills in French (writing and speaking) remain behind those of their francophone peers. It seems evident that the quality of delivery in terms of teaching the target language as well as teaching in the target language needs to be addressed as researchers and educators work to better understanding the conditions for bilingual proficiency.

These, however, are not new findings. Researchers have suggested for some time that what educators do with a given allocation of time is extremely important and, as this study suggests, may turn out to be as important as how many hours they spend promoting L2 learning overall. Genesee (1987) recognizes that time is an important factor in L2 learning but that it is only one of many factors involved in second language learning:

Time itself is not a psychological variable, and, therefore, there is no reason to believe that considered alone it will have consistent effects on psychological processes such as language learning. (p. 194)
As previously noted in Chapter Two, Genesee believes that the most important aspect of language development depends on the language curriculum. From a pedagogical point of view, he suggests (based on his review of the research) that students in many immersion classes are given limited opportunity to actively engage in discourse. He claims that they are given few chances to speak at all during class and even less opportunity to initiate the use of language. In a study of grade three and six immersion students, Swain (1988) also found that students' participation in oral activities was limited. Her data suggests that nonnative-like production skills of immersion students may result from learning environments in which there is a lack of opportunity to engage in extended discourse. Similarly, in a review of the impact of immersion programmes, Halsall (1989) states that "optimal teaching strategies are not being used throughout the years of the EFI programmes" (p. 3-9). Although these "Lessons from immersion" (Genesee, 1991) were published about ten years ago, it may be that these kinds of pedagogical issues still haven't been fully addressed or implemented.

In 1989, Cummins described a model designed to promote students' development of greater proficiency in L2 speaking and writing skills in what he labeled as a more "interactive/experiential" curriculum. For example, some of his recommendations included increasing the genuine dialogue between student and teacher in both oral and written modalities as well as encouraging student-student talk in collaborative learning contexts. Others have suggested placing a greater emphasis on the writing process through formal teaching and more emphasis on cooperative
learning through problem-solving tasks that develop higher levels of proficiency in speaking and writing across many oral and written language genres (Heath, 1986; Kagan, 1986).

In light of the results of this study, it may be useful for the members of the research team including the school staff to reflect upon the implementation of the 80% enhanced programme both from a point of view concerning quantity in terms of the amount of instructional time in French (including a review of the subjects taught and by whom) as well as from a point of view regarding the content of the instructional programme. That is, these results could provide the impetus for staff to reflect on professional practices guided by research findings from this study as well as some of the findings which are mentioned above. The time and opportunity should be provided to staff to implement specific curricular content such as the writing process, critical reading skills, etc. which have been identified as potential areas of growth in the EFI programme. This could provide the staff with an enriching professional development growth opportunity which would ultimately benefit students in the development of both their first and second language skills.

Limitations of the Study

The following section reviews some of the limitations of this study that have previously been mentioned as well as some comments about its external validity.

The design of this study was quasi-experimental in nature. It was not a true experiment where variables were strictly controlled and where subjects were kept in intact groups. As in most educational research, although causal inference is desired,
it is neither feasible nor ethical to design true experiments. Random assignment of subjects is impossible in a school setting. Fortunately, quasi-experimental designs offer a feasible alternative that approximates the true experimental type. The purpose of this method is the same - to determine cause and effect - and there is direct manipulation of conditions. While not true experiments, quasi-experiments provide reasonable control over most threats to validity. A limitation of this study then is that it is not a true experiment by virtue of the fact that it was conducted in an intact school setting. A consequence of this design is that the kinds of interpretations made about cause and effect relationships are limited.

The primary objective of this study was to investigate the relationship between time/intensity and students' biliterate proficiency. It is without question an important factor but, as previously discussed, it is one of several important elements in second language learning. A second limitation of this study is that it does not attempt to address other factors like instruction or curriculum which clearly play key roles along with intensity in enhancing students' language skills. These issues are discussed in greater detail in the second half of this chapter as they are important considerations in terms of the implications of the study and directions for future research. The issue of teacher effect, discussed in some depth in Chapter Five, must also be considered as a limitation of this study as it was an uncontrolled variable that might bear on the results.

Because of the challenges in the implementation of the 80% enhanced programme in the school, students in the so called '80%' group did not receive a "pure" 80% treatment. That is, the innovation (at least in its idealized form) was not fully implemented.
As in any educational research, careful consideration must be taken in the selection of the instruments employed. Their validity and reliability are critical in the presentation and analysis of results. As previously discussed, the general impression scoring that was used in this study to evaluate student writing samples provided the researchers with important information about student writing particularly given the nature and design of this longitudinal study. It may be that a more analytical scoring system may have provided more insight into features of students' writing which may have revealed further differences between the two groups.

An important feature of the rationale behind this study is the implications for programme delivery not only at L'Ecole Jules Quesnel but also for other immersion schools in Vancouver and other districts. The results of this study alone indicate that the outcomes of the enhanced programme are not persuasive enough to affect district policy regarding programme delivery. Regardless of these results, it should be cautioned that the profile of L'Ecole Jules Quesnel (its population and community) is different from other immersion schools on the westside of Vancouver and profoundly different from schools located on the eastside of the city. As more ESL students attend French immersion schools on the eastside of Vancouver, the generalizability of results to students in these settings may be affected. It may be, for example, that ESL students in the EFI programme may need more than the 20% allocation of instructional time in English as prescribed in the 80% programme implemented at L'Ecole Jules Quesnel in order to develop their English language skills. Therefore, the results and conclusions of this study can only be generalized to a population and setting comparable to L'Ecole Jules Quesnel.
From a research perspective, it was beyond the scope of this study to examine the pedagogical and curricular variables as they pertain to students' biliterate proficiency. These may, however, be important considerations for future research. Case studies which investigate how teachers implement an innovation like an 80% intensity programme may be one approach for future research that would broaden our understanding of some of the curricular and pedagogical issues in question. A closer examination of programme delivery pertaining to curriculum as well as an analysis of the range of instructional practices utilized by immersion teachers could broaden our understanding of how these variables relate to the issue of intensity. It would have been interesting to include teacher interviews, surveys and/or questionnaires as part of this study. This could have provided the researchers with more information about the actual implementation of the innovation in the classroom as well more precise estimates as to the actual percentage of instructional time in each language. Data could have also been gathered regarding the pedagogical approaches utilized and teachers' styles and preferences. Although gathering and analysing this kind of data may be somewhat ambitious, having access to this kind of information certainly would have provided us with a richer context in which to analyze our results and further broaden our understanding of the conditions for bilingual proficiency. The results of this study do, however, provide researchers and educators with a better understanding of the relationship between time allocation and biliterate proficiency. Future studies that seek to better understand the interactions amongst time (quantity, organization) and task (curriculum, pedagogical factors) variables will serve to further our understanding of the complex way in which these factors interact.
REFERENCES


Parkin, M., Bunyun, R., & Unitt, J. (1988). Three years of middle immersion: How far have they come? Ottawa, ON: Research Centre, Ottawa Board of Education.

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APPENDICES
<table>
<thead>
<tr>
<th>Program</th>
<th>Teacher</th>
<th>Focus</th>
<th>Score</th>
<th>Test or Sample (Notes on objectives)</th>
<th>CMCAP (French)</th>
<th>Notes</th>
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<td>French</td>
<td>Classroom Teachers of LAC</td>
<td>Reading comprehension of short passages.</td>
<td>60 minutes administration in room.</td>
<td>Admin &amp; Scoring</td>
<td>Administered By English</td>
<td>No. of Sample</td>
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<td>Grade 2 (LAC)</td>
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<td>Reading with emphasis on word and vocabulary</td>
<td>60 minutes administration in room.</td>
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<td>Administered By English</td>
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<td>60 minutes administration in room.</td>
<td>Admin &amp; Scoring</td>
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<td>No. of Sample</td>
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**APPROVED BY:** School and Project Team, 95.09.30

**OVERVIEW OF ASSESSMENT PROCEDURES:** 1995-96

**ECOLE JULES GUESSEL 80% FRENCH PROGRAM STUDY**
<table>
<thead>
<tr>
<th>Focus</th>
<th>Administration &amp; Scoring</th>
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<tbody>
<tr>
<td>1. French</td>
<td>2. English</td>
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- **French**
  - First year of 60% French with French proficiency after
  - Assessments: 2 hours, pre-teaching and writing in French
  - Expositions, narrative modes are selected
  - Pre-treatment learning sequence
  - J. Binetti (administrative officer)

- **English**
  - First year of 20% English with English proficiency after
  - Assessments: 8 hours, pre-teaching and writing in English
  - Expositions, narrative modes are selected
  - English specialist
  - J. Binetti (administrative officer)

**Research questions**

- Approx. 20 minutes to administer

**Response to a scenario played on tape**

- Approx. 50 minutes to administer

**Understanding of communication in English and French**

- Classroom teachers

**French & English versions**

- May 95

**French & English versions of skills**

- October 95

**Self-assessment of skills**

- October 95

**English Writing samples**

- May 96

**French Writing samples**

- May 96

**French Writing samples**

- May 96
<table>
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<th>Grade Five (50% French, 50% English)</th>
<th>60% of 96</th>
<th>French Writing Samples</th>
<th>English Writing Samples</th>
<th>May 1996</th>
<th>J. Brunel</th>
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<th>J. Brunel</th>
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<td>2. Writing, planning, and drafting.</td>
<td>2. Writing, planning, and drafting.</td>
<td>2. Writing, planning, and drafting.</td>
<td>2. Writing, planning, and drafting.</td>
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<tr>
<td><strong>Assessment English Writing</strong></td>
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<td>2. Writing, planning, and drafting.</td>
<td>2. Writing, planning, and drafting.</td>
<td>2. Writing, planning, and drafting.</td>
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<td>2. Writing, planning, and drafting.</td>
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*Approved by IFT and PEO, 96-08-30*
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<th>Communication awareness of effective understanding of communication in response to a scenario played on tape.</th>
<th>Students</th>
<th>K. Reeder</th>
<th>May 95</th>
<th>Knowledge of pragmatics of language use.</th>
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<td>Interview</td>
<td>Classroom teachers</td>
<td>October 95</td>
<td>French and English attitudes toward French and English</td>
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<td>Pupil beliefs about proficiency in French and English</td>
<td>Questionnaire</td>
<td>Classroom teachers</td>
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<td>Information on pupil skill level in English and French</td>
<td>Questionnaire</td>
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<td>Self-assessment of skill, French and English versions</td>
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<td></td>
<td></td>
<td></td>
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<td>May 22/97</td>
<td>Administer Reading Assessment Study: Achievement tests with low scores</td>
<td></td>
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**NOTES:**

- Administer Reading Assessment Study: Achievement tests with low scores.
- Administer Reading Assessment Study: Achievement tests with low scores.
- Administer Reading Assessment Study: Achievement tests with low scores.
- Administer Reading Assessment Study: Achievement tests with low scores.

**APPENDIX II**

**Procedure**

1. **Grade Five (80% French)**
   - Administer Reading Assessment Study: Achievement tests with low scores.
   - Administer Reading Assessment Study: Achievement tests with low scores.
   - Administer Reading Assessment Study: Achievement tests with low scores.
   - Administer Reading Assessment Study: Achievement tests with low scores.

**ECOLE JULIUS QUEENS: 80% French Provision Study; Assessment Procedures, Spring 1997**

**GRADUATE 5 (n=12)**

- **Total = 41**

**DIY. 5 (n=12)**

- **P. O'Dowd**

**EICOLE JULIUS QUEENS: 80% French Provision Study; Assessment Procedures, Spring 1997**
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<th>N/A</th>
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<td>Year 1</td>
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<td>Year 1</td>
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<td>June 5/97</td>
<td>French film screening, followed by a discussion.</td>
<td>Classroom</td>
<td>Teachers</td>
</tr>
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<td>June 6/97</td>
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<td>Classroom</td>
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<td>June 15/98</td>
<td>French film screening, followed by a discussion.</td>
<td>Classroom</td>
<td>Teachers</td>
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<td>Friday, May 1/98</td>
<td>Social: movie, 10 min per pupil</td>
<td>Classroom</td>
<td>Teachers</td>
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<td>Friday, April 24/98</td>
<td>Social: classroom teachers, present new scores and grades.</td>
<td>Classroom</td>
<td>Teachers</td>
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<td>April 17/98</td>
<td>Teacher social, allow 10 min</td>
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<td>Big Screen Classroom</td>
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<td>French Writing Sample: Training Provided April 17/98</td>
<td>Classroom</td>
<td>Teachers</td>
</tr>
<tr>
<td>May 19-22/99</td>
<td>French Writing Sample: Training Provided April 17/98</td>
<td>Classroom</td>
<td>Teachers</td>
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<tr>
<td>May 4-6/99</td>
<td>French Writing Sample: Training Provided April 17/98</td>
<td>Classroom</td>
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<td>May 27/99</td>
<td>French Writing Sample: Training Provided April 17/98</td>
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<tr>
<td>May 15-17/99</td>
<td>French Writing Sample: Training Provided April 17/98</td>
<td>Classroom</td>
<td>Teachers</td>
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</table>

**Notes:**
- **French**: Readings, listening, speaking, writing, and grammar.
- **English**: Reading, writing, and grammar.
- **Mathematics**: Calculations and problem-solving.
- **History**: Study of significant events and figures.
- **Science**: Experimentation and inquiry-based learning.

**APPENDIX III**

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**Grade 6 (80% French, 20% English)**

**Overview of Assessment Procedures, 1997-98**

- **L'ÉCOLE JULES GUESNEL**: 80% French Provision Study
- **Draft**: For approval by school and district staff

**Division 3 (D. Ross's Laboratory)**: N=20, Total = 44
## APPENDIX III

### NOTES
1. Jane Weakerfield, Dep. of Language Education, UBC, will serve as project manager for all data collection (tel. 224-5944).

### English writing sample: DESCRIPTIVE
- French writing sample: NARRATIVE
- June 15-19, 98
- Classroom teachers
- Monique Boulnois (principal)
- Two short essays about their own English and French writing
- Letter to friend describing their English and French writing

### Math Form 1
- Reading Canadian Edition Level Test de lecture, Grade 5-F
- April 15-17, 98
- Classroom teachers
- Test administered by Brigitte Castelain
- Reading comprehension, writing, speaking, and listening, on practical contexts

### Math Form 2
- Reading Canadian Edition Level Test de lecture, Grade 6
- April 20-24, 98
- Classroom teachers
- Test administered by Brigitte Castelain
- Reading comprehension, writing, speaking, and listening, on practical contexts

### Administered by Focus
- Test of Sample Admin. Math Form 1 & 2
- Administered in English

### Administering
- Math Form 1 & 2
- Administered in English

### Math Form 1 & 2
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### Administering
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- Administered by Focus
- Math Form 1 & 2
- Administered in English

### Grade SEVEN (60% French in Core Academic Subjects):

- Division 1 (L. Mattu, G. Bell, n = 30
- Division 2 (G. Rongeau), n = 4, Total = 34

### Deadline for submitting test or sample to office
- April 17, 98
- Deadline for submitting test or sample to office
- April 24, 98
- Deadline for submitting test or sample to office
- April 30 / 98
- Report to be submitted: Allow 10 min.
- Teacher scored: Allow 10 min.
- Teacher scored: Allow 10 min.

### Administering
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- Math Form 1 & 2
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TO PARENTS OF GRADE FOUR STUDENTS AT ÉCOLE JULES QUESNEL

We are writing to inform you of a study sponsored by the school entitled L'ÉCOLE JULES QUESNEL 80% FRENCH STUDY. As announced last spring, Jules Quesnel students beginning Grade 4 this year are receiving 80% of their instruction in French and 20% of their instruction in English for the balance of their elementary schooling. Previously students received only 50% of their instruction in French from Grade 4 onward. The aim of this program innovation is to enhance and maintain French language ability and positive attitudes through the intermediate school years, while providing sufficient English language arts instruction to maintain and develop ability in English. The 80% program is now in place.

We need to know how effective this program change will be in meeting its stated aims. With this in mind, the school staff and administration have designed a study of the program's effects. We plan to undertake systematic sampling of our grade four students' French and English learning over the next three to four years, and to survey our students' attitudes toward French, English, and their own language learning. We also plan to track our retention of students in French Immersion.

Jennifer Buntain, a member of our teaching staff, will be participating in this program assessment as part of the requirements of an M.A. degree in Language Education from the University of British Columbia. Her research supervisor, Dr. Ken Reeder of UBC's Department of Language Education is working with the study team as coordinator of research. Other members of the study team are listed at the end of this letter for your information.

In accordance with Vancouver School Board and UBC research guidelines, we are seeking your consent on your daughter's or son's behalf for the administration of a series of tests of English and French reading, French communication skills, sampling of English and French written composition and academic writing, and two student attitudinal and self-assessment questionnaires. We estimate that students will devote approximately four hours of time in the Fall of 1995, and six hours in May of 1996 to these procedures. All procedures have been thoroughly selected by the team for their educational merit as well as their technical usefulness. The tests and samples represent some of the best teaching and learning activities available for French Immersion programs, so we believe students will benefit educationally from the tasks we are asking them to undertake.

We also wish to assure you that no student's individual performance information will be made available to individuals other than members of the study team, qualified UBC research assistants and the students' own classroom teachers. Records of individual students'
TO PARENTS OF GRADE FIVE STUDENTS AT ECOLE JULES QUESNEL

We are writing to inform you of a study sponsored by the school entitled L'ECOLE JULES QUESNEL 80% FRENCH STUDY. As announced last spring, Jules Quesnel students beginning Grade 4 this year are receiving 80% of their instruction in French and 20% of their instruction in English for the balance of their elementary schooling. Students currently in Grade 5 will continue, like other French Immersion students in Vancouver, to receive 50% of their instruction in French and 50% in English for the balance of their elementary schooling. The aim of the program innovation is to enhance and maintain French language ability and positive attitudes through the intermediate school years, while providing sufficient English language arts instruction to maintain and develop ability in English. The 80% program is now in place for Grade 4 students.

We need to know how effective this program change will be in meeting its stated aims. With this in mind, the school staff and administration have designed a study of the program's effects. We plan to undertake systematic sampling of our grade four and five students' French and English learning over the next three to four years, and to survey our students' attitudes toward French, English, and their own language learning. We also plan to track our retention of students in French Immersion.

Jennifer Buntain, a member of our teaching staff, will be participating in this program assessment as part of the requirements of an M.A. degree in Language Education from the University of British Columbia. Her research supervisor, Dr. Ken Reeder of UBC's Department of Language Education is working with the study team as coordinator of research. Other members of the study team are listed at the end of this letter for your information.

Your daughter or son is a member of the critical comparison group in Grade Five essential to the success of such a study. In accordance with Vancouver School Board and UBC research guidelines, we are seeking your consent on your daughter's or son's behalf for the administration of a series of tests of English and French reading, French communication skills, sampling of English and French written composition and academic writing, and two student attitudinal and self-assessment questionnaires. We estimate that students will devote approximately four hours of time in the Fall of 1995, and six hours in May of 1996 to these procedures. All procedures have been thoroughly selected by the team for their educational merit as well as their technical usefulness. The tests and samples represent some of the best teaching and learning activities available for French Immersion programs, so we believe all students will benefit educationally from the tasks we are asking them to undertake, whether they are receiving 50% or 80% of their instruction in French.

Jennifer Buntain, M.A. candidate in Language Education, is coordinating the study.

TO PARENTS OF GRADE FIVE STUDENTS AT ECOLE JULES QUESNEL

October 23, 1995

Jules Quesnel 80% French Study
JULES QUESNEL 80% FRENCH STUDY
STATEMENT OF INFORMED CONSENT, 1995-96.

I have read the enclosed letter and "Overview of Assessment Procedures 1995-96", and understand the aims and benefits of this assessment. I understand that I am under no obligation to furnish consent, and that I may withhold it with no adverse consequences for my daughter or son's continued participation in all classroom instruction. I also understand that my daughter/son is free to voluntarily withdraw from any assessment procedures described here with no additional consequences for her or his continued participation in classroom instruction.

I GIVE / DO NOT GIVE (mark one) PERMISSION FOR MY DAUGHTER / SON

(name)___________________________ YES TO PARTICIPATE IN THE ASSESSMENT OF THE
80% FRENCH STUDY FOR THE 1995-96 SCHOOL YEAR.

(signed) ___________________________ DATE: __________________

I ACKNOWLEDGE HAVING RECEIVED AND REVIEWED A COPY OF THIS LETTER AND
THE ENCLOSED "OVERVIEW OF ASSESSMENT PROCEDURES 1995-96"

(signed) ___________________________ DATE: __________________

Please return one signed copy of this consent form to the classroom teacher or the school office within one week of receiving it. Keep the attached information for your records.

Thank you for your cooperation!