

THE SUITABILITY OF FRENCH IMMERSION FOR STUDENTS WHO ARE AT-RISK: A REVIEW OF RESEARCH EVIDENCE¹

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In 1965, some 23 years prior to the Official Languages Act, Canada pioneered innovative second language education programs to promote acquisition of Canada's two official languages. French immersion programs were first introduced in Canadian schools in the Quebec community of St. Lambert, outside Montreal. The goals of this program were to provide anglophone children residing in Quebec with enhanced and extended opportunities to become bilingual in English and French within the context of public schooling (Lambert & Tucker, 1972, and Genesee, 1987, provide histories of this program). The immersion program that was instituted in St. Lambert was innovative in its use of French for academic and language arts instruction and as a language of social communication during the entire school day for the first three years of English-speaking children's education (Kindergarten to Grade 2). Students were taught language arts (including reading and writing), mathematics, sciences, and social studies by native French-speaking teachers. The rationale behind this innovative approach was to immerse students in a school environment in which French would be used for extended periods of time for meaningful and cognitively-engaging communication and, thereby, draw on their natural language learning abilities. English was introduced into the curriculum in Grade 3 and its use was increased until approximately 50% of the curriculum was taught in each language by the final years of elementary school (Grades 5-6). This model has been implemented elsewhere and has given rise to a number of alternatives (Genesee, 2004).

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There has been extensive and thorough evaluations of immersion programs in Quebec (Lambert & Tucker, 1972; Genesee, 1987) and in other areas of Canada (e.g., Swain & Lapkin, 1982), and indeed around the world in communities that have adopted what has come to be called “the Canadian model” of bilingual education (Johnson & Swain, 1997; Christian & Genesee, 2001). In brief, Canadian researchers have found considerable consistency in immersion students’ linguistic and academic achievement. More specifically, research carried out during the 1970s and 80s, after immersion was first instituted, found that:

(1) Immersion students achieve the same (and in some cases superior) levels of competence in English, their native language, in domains related to reading, writing, speaking and listening comprehension in comparison to comparable anglophone students in all-English programs (Genesee, 2004);

(2) immersion students also attain the same (and in some cases superior) levels of academic achievement in mathematics and science in comparison to control students in all-English programs;

(3) at the same time, they achieve significantly higher levels of functional proficiency in French in comparison to English-speaking students in conventional French-as-a-second language classes;

(4) immersion students generally achieve higher levels of proficiency in reading and listening comprehension skills (sometimes scoring as well as native French-speaking students) than on tests of speaking and writing; in all domains, their level of functional proficiency is at the advanced level

(5) immersion students retain a strong sense of identify with English-Canadian culture while acquiring an understanding and appreciation of French Canadians and French-Canadian culture that is not seen, in general, in non-immersion students.

These studies examined the performance of the general population of students enrolled in immersion programs during the 1960s to 1980s, those years when immersion was on the ascendancy in Canada. In a more recent report, Turnbull, Lapkin and Hart (2001) found that the English language test results of students who had participated in French immersion programs in Ontario during the 1990s were essentially the same as those found in earlier studies. Turnbull and his colleagues' analyses were based on the results of the Ontario Education Quality and Accountability Office (OEQAO) tests in English reading, writing, and mathematics. These findings provide reassurance that immersion continues to be effective for the general population of students.

Research has also sought to evaluate the suitability of French immersion for students who might be considered at-risk for academic difficulty or failure owing to a variety of learner-related factors, including (a) low levels of academic ability (e.g., Genesee, 1976); (b) language-related learning disabilities (e.g., Bruck, 1982; Trites, 1978/79); (c) disadvantaged socio-economic backgrounds (e.g., Holobow, Genesee, Lambert, Gastright & Met, 1987); and (d) minority ethnic group status (e.g., English-speaking children of Mohawk cultural background; Genesee, 2004, for a review). Students with these learner characteristics or socio-cultural backgrounds often perform relatively poorly in school for complex and often poorly understood reasons. The purpose of the present report is to review, analyze and synthesize the results of research on (1) the suitability of French immersion for students with special needs and (2) successful interventions and strategies for meeting the educational needs of such students. The focus of the

report is on students with generally low levels of academic ability and students with learning disabilities.

Students with low levels of academic ability have a level of general intellectual competence that falls at the low end of a normal distribution of intelligence; their low ability is further reflected in difficulty learning academic material in general. Such students are thought to have intact neuro-cognitive systems, but function at a relatively low level. Students with low academic ability require special individualized attention in school but are not regarded as requiring clinical attention by a developmental specialist. Their needs can often be met by classroom teachers within the context of classroom instruction and individualized planning. In contrast, a “learning disability” is widely regarded as a neurobiological (or innate) impairment in the underlying brain processes that are responsible for learning (Fiedorowicz, Benezra, MacDonald, McElgunn, Wilson, & Kaplan, 2001; see also Official Definition of Learning Disabilities of the Learning Disabilities Association of Canada, 2002). Such impairments are thought to be associated with specific aspects or areas of brain functioning and, thus, are associated with specific disabilities – usually related to learning language (specific language impairment), reading/writing (reading impairment), and other non-linguistic cognitive skills (cognitive impairment). In effect, the term “learning disability” encompasses a spectrum of different learning impairments, each with its own underlying neuro-cognitive etiology. At present, there is no consensus on the precise nature of the impairment that students with learning disability have -- for example, what exactly is specific language impairment and how does it differ from a reading impairment. Nor is there consensus on the precise neuro-cognitive problems that result in these disabilities.

Numerous researchers, educators, and parents have expressed concerns about the suitability of immersion for students who are at-risk owing to below average levels of academic ability or learning disabilities (Bruck, 1978; Calvé, 1991; Genesee, 2004; Hayden, 1988; Lapkin, Swain & Shapson, 1990; Majhanovich, 1993; Mannavarayan, 2002; Murtagh, 1993/94; Obadia & Thériault, 1997; Trites & Price, 1978-79; among others). There are a number of important educational questions at issue:

(1) Should at-risk students be discouraged (or actually disqualified) from enrolling in French immersion programs because it seriously jeopardizes their basic education (see Trites, 1978, for example)?

(2) Is it possible to identify students who are not suitable candidates for immersion prior to school entry? More specifically, do we possess the knowledge that would be required to develop valid and reliable diagnostic tests that could identify students who are not suitable for immersion?

(3) Are some forms of immersion more suitable for certain at-risk students than other programs; for example, Trites (1978) and Wiss (1989) have suggested that late immersion may be more suitable than early immersion for students with learning disabilities that are due to developmental lags.

(4) If a student is identified as learning disabled or otherwise at-risk AFTER enrolling in immersion, should such a student be transferred to an English program? At what grade level would it be appropriate to transfer such a student and what kinds of follow-up support should he/she receive in the English program?

(5) If students who are at-risk are retained in immersion programs, what kind of additional support is required to support their special learning needs and in what language should it be provided (in the students first language or in the immersion language)?

(6) What professional competencies should immersion teachers have in order to provide appropriate and effective instruction for special needs students in immersion?

A number of important ethical questions are also at issue. Ethical issues arise because excluding at-risk students from immersion programs is to deprive them of access to important life- and job-related skills, namely, proficiency in both French and English. The Office of the Commissioner of Official Languages recently embarked on an ambitious initiative to double the number of young Canadians who are proficient in both official languages by 2013 (Commissioner of Official Languages, 2004). If this initiative is to apply to all young Canadians, scientific information is needed that attests to the suitability of immersion for at-risk students so that parents and schools are reassured that including such students is appropriate. Arguably, bilingualism is important not only in the Canadian context, but also in the international context, given the globalization of the economy and employment opportunities. Can Canadian schools ethically exclude at-risk students from what is viewed to be the most effective educational means for promoting bilingual competence given such global realities? Conversely, however, to include at-risk students in immersion assumes that schools have appropriately-trained teachers and effective support services to meet their needs. Specialized services for at-risk students are often not available (e.g., Collinson, 1989), and, when available, not necessary validated.

In the next section, the methodology that was used for this review is described. This is followed by reviews of research on the suitability of immersion for (a) students with below average or low levels of academic ability, and (b) students with learning disabilities (language impairment and/or reading disabilities). Research on interventions for at-risk students in

immersion is then considered and the final section provides a summary of research findings along with recommendations.

METHODOLOGY OF THE REVIEW

The following steps were taken for this review:

- Step 1: the contents of key journals that report research on immersion, both in Canada and the U.S., were examined “manually” for relevant articles; a list of journals that were examined is included in Appendix A. Manual inspection was limited to the previous 7 years; that is, from 1999. The inclusion criterion was broad in scope so that if the abstract of any article appeared relevant, it was obtained for further review
- Step 2: an electronic search for relevant articles was undertaken using the following search engines: ERIC, PsycINFO, and Google Scholar. A list of keywords used in these searches is provided in Appendix B. As in Step 1, all articles that appeared relevant based on the abstract were downloaded for further analysis.
- Step 3: key researchers in Canada who have carried out research on immersion and/or were likely to be familiar with such research were contacted via email and asked for references to research on the topic; see Appendix C for a list.
- Step 4: all articles identified in Steps 1 to 3 were obtained and read in order to identify additional articles that might have been missed. It was not possible to obtain copies of a number of reports that were prepared by school boards or ministries of education owing to time-constraints and difficulty in locating copies of these reports because many are quite old and are not archived in publicly-accessible libraries or electronic forms.
- Step 5: all articles identified to this point were then read and the following decisions were taken:

- a) exclude the article from further consideration because the subject matter was not relevant to the goals of the report
- b) retain the article for further consideration. Articles that did not include empirical evidence of student outcomes but were relevant to the goals of this report were retained, but their use was limited to the preparation of the conceptual part of the report. Articles that included empirical evidence relevant to the goals of the report (e.g., test results, teachers and/or parents' reports) and met minimum methodological standards were retained for inclusion in the empirical review sections of the report. Both qualitative and quantitative studies (including case studies) were retained.

Step 6: Each empirical article that was retained was then classified with respect to which risk factor it pertained to: academic ability or learning disability. Each sub-set of empirical studies thus identified was subsequently re-read and summaries and critiques were prepared.

ACADEMIC ABILITY

In this section, studies that have examined the performance of students with below average academic ability are reviewed (Bruck, 1985a, b; Genesee, 1976). No studies of severely cognitively handicapped children in immersion were found (but, see Rondal, 1984, for a discussion of related issues; and see Kay-Raining Bird, Cleave, Trudeau, Thordardottir, Sutton & Thorpe, 2005, for research on bilingualism and children with Down Syndrome). Academic ability has been determined in the research reviewed in this section using standardized tests of intelligence (see Genesee, 1976) or, more directly, using students' performance on tests of academic achievement (Bruck, 1985 a, b). Yet other studies use parental or teacher reports of

academic ability to determine if a student is having academic difficulty (see Mannavarayan, 2002).

In one of the first studies on the suitability of immersion for students with below average levels of academic ability, Genesee (1976) systematically examined the performance of both elementary and secondary level English-speaking students in French immersion programs in Montreal in relation to their intellectual ability. The performance of immersion students was compared to that of similar students in the English program. Both immersion and non-immersion students were classified as average (IQ between 90 and 110), below average (IQ less than 85), or above average (IQ above 115) based on their scores on a standardized IQ test. Student performance on IQ tests typically correlates positively and significantly with performance on tests of academic achievement, such as reading, math, and science. Genesee examined the students' school performance with respect to both English and French language development (reading, speaking, and listening comprehension skills) and academic achievement (mathematics). With respect to English language development and academic achievement, below average students in immersion scored at the same level as below average students in the English program on both English language and academic achievement tests. In other words, the below average students in immersion were not differentially disadvantaged in their English language development or academic achievement as a result of participation in immersion in comparison to comparable students in all-English classrooms. Cummins (1984) reports that evaluators in Edmonton reported a similar lack of differential effects of intelligence on performance of immersion versus non-immersion students in that city. In keeping with their at-risk status, the below average students in both the immersion and English programs in Montreal scored significantly lower than their average and above average peers in their respective

programs on the same measures. With respect to French language acquisition, the below average students in immersion scored significantly higher on French language tests than the below average students in the English program who were receiving conventional second language instruction. In other words, the below average students were benefiting from immersion in the form of enhanced second language proficiency.

Genesee also compared the performance of early and late² immersion students in each of the ability sub-groups to see if academic ability had the same effects on performance in elementary and secondary schools. His comparisons revealed interesting and differential effects of academic ability on French language proficiency. Specifically, below average students in both early and late immersion programs scored lower than average students in the same programs on tests of French language development related to literacy (reading and writing); similarly, average students in both program types scored lower than above average students. In other words, the effects of academic ability were the same in both early and late immersion when it came to achievement of second language literacy skills. Differential effects of academic ability were found, however, on tests of French speaking and listening. Whereas above average students in **late** immersion acquired better speaking and listening skills in French than average and below average late immersion students, below average students in **early** immersion scored just as well as average and above average early immersion students on speaking and listening tests. Speculatively, acquisition of communication skills in a second language when it is integrated with academic instruction is more cognitively-demanding at the secondary than elementary school level and, as a result, calls on the kinds of cognitive skills that are differentially available to older students. In contrast, acquisition of second language skills that

² In late immersion programs, French is used to teach academic instruction at the end of elementary or beginning of secondary school. Students often have studied French as a school subject in the grades prior to beginning late immersion.

are integrated with academic instruction at the elementary level calls on the natural language learning ability that all students possess during their formative years. In any case, these findings suggest that early immersion is more egalitarian than late immersion since it appears to be equally effective for students with different levels of general academic ability. Overall, these results indicate that low academic/intellectual ability is no more of a handicap in French immersion than it is in English programs and, to the contrary, low performing students can experience a net benefit from immersion in the form of bilingual proficiency.

Bruck (1985a) examined the role of academic ability in decisions to switch some students out of early immersion. In question in this research is to what extent academic difficulty is the underlying cause of students' dropping out of immersion. If academic difficulty alone were sufficient to explain such cases, then it could be argued that students with below average academic ability are differentially at risk in immersion programs in comparison to regular English programs. To make this argument, it is critical to establish that there is **differential** risk for academic difficulty in immersion since students with below average ability typically do less well academically than average and above average students even in programs that use their first language. Returning to Bruck, she compared the academic, family, and psychological characteristics of early immersion students who switched to an English program with those of students who remained in the immersion program. She found, as expected, that the students who switched scored lower on a number of achievement tests than most of the students who remained in immersion. However, the academic difficulties of the students who switched were no worse than those of a sub-group of students who remained in immersion despite low academic performance. What distinguished the students who switched from those who remained in the program despite their difficulties was that the students who switched expressed significantly

more negative attitudes toward schooling (and immersion in particular) and exhibited more behavioral problems than students with difficulties who stayed in the program. In sum, Bruck suggested that the ability to cope with poor academic performance may be a more serious problem for some immersion students than poor academic performance alone and she argued that low academic ability alone does not distinguish students who can benefit from immersion from those who cannot. In other words, other things being equal, some students with low levels of academic ability can benefit from immersion.

In a follow-up study, Bruck (1985b) noted that students who switched out of immersion continued to have academic difficulties and to exhibit attitudinal and behavioral problems. In an earlier longitudinal study, Bruck (1978; 1978/79) reported on the progress of individual immersion students who had switched to an all-English program owing to academic difficulties. She noted that there were “few cases of unqualified success of switching” in that the students appeared to achieve at the same level in the English program as they had in immersion. She cautioned that switching immersion students to an English program too earlier can create problems since they would have had insufficient instruction in English to fit in easily with students who had had all prior instruction in English. She cautioned further that switching could have negative consequences for students’ self-esteem and could give students a sense of failure (see also Wiss, 1989, for similar concerns).

In contrast, the results from other studies suggest that transfer to an English program results in improved performance, attitudes, and behavior for students who had experienced academic difficulty in immersion (see Halsall, 1994, for a review of transfer studies). Bonyun, Morrison and Unitt (1981, in Mannavarayan, 2002) reported that: 90% of parents indicated that, after leaving immersion, their children felt enthusiastic and positive about school; two-thirds of

the children had more positive attitudes; and most parents believed that their children's academic progress was "going well". Parkin, Morrison and Watkin (1987) reported that "not only do most transferees show a significant improvement in academic progress and attitude", but most children adjusted well to the change. Similarly, Waterson (1990) reported that in 38% of transfer cases, "the problems disappeared", problems decreased in 9%, and in no case did they multiply (see also Trites, 1984; and Wiss, 1989).

Caution must be exercised when interpreting these results for a number of reasons. Because they are based on people's impressions, they are subjective and, possibly, unreliable. More importantly, the interpretation of such self-reports, even if they are accepted at face value is not straightforward. They cannot be interpreted as evidence that immersion is not suitable for children with below average academic ability because it was not established in these reports that these students were in fact below average; all we know is that they were having academic difficulties. Nor can these results be interpreted as evidence that students who experience academic difficulties in immersion should be transferred to an English program since it was not established in these studies that all students in the immersion program who experienced academic difficulties were motivated to seek transfer. As Bruck's results suggest, the variable that distinguishes those who seek transfer from those who do not may not be academic difficulty, but rather the frustration and anxiety that some students experience in the face of such difficulty (see also Mannavarayan, 2002, for a similar comment). Moreover, we do not know whether the students who transferred would have been able to cope with their academic difficulties in immersion had they be given appropriate educational support.

Untangling these issues is more than an academic exercise; it is important in order to determine with validity whether low levels of academic ability and achievement are impediments

to retention and success in immersion. Clearly, all students who experience academic difficulty deserve additional attention, no matter what program they are in. What is in question in the case of immersion is: What is the appropriate response by parents and educational authorities to students who have below average academic abilities and experience academic difficulties? Should they be encouraged to transfer to an English program on the grounds that this will resolve their academic problems, or should they be encouraged to stay in immersion and be provided with appropriate remedial services on the grounds that their low level of academic ability is not an impediment to benefiting from immersion, but that their emotional reaction to their difficulties may be. An ancillary question is: Should educators respond in the same way to all immersion students who experience academic difficulty regardless of where they live – in monolingual Toronto versus bilingual Montreal, for example? Arguably, learning French is substantially more useful and the benefits of being proficient in French are greater in Montreal and Fredericton because of the prevalence of native French-speakers than in Toronto and, as a result, greater effort should be expended to retain and support students in Montreal, even those with below average academic ability, so that they can achieve within their individual limits and become bilingual at the same time.

LEARNING DISABILITIES

As noted in the previous section, children with LD are thought to have neuro-biologically-based difficulties in learning in specific domains. Distinctions are often made between specific **language** impairment and **reading**-specific impairment, although there is often overlap so that students with language impairment often also have reading disabilities (Catts, Fey, Tomblin & Zhang, 2002; Conti-Ramsden et al, 2001; Snowling et al., 2000). From a strictly “common sense” point of view, it is not surprising that it has been argued that children

with impairments in learning language or learning to read would be differentially handicapped in French immersion programs where they must learn a new language and, at the same time, learn new academic content and skills through that language. Despite the substantial concern that has been expressed by researchers, educators and parents about the suitability of immersion for students with learning disabilities, there has been relatively little actual empirical research on such learners. Our review of the empirical literature identified only three sets of studies on immersion students with language impairment (Bruck, 1978, 1982; Trites & Price, 1978/79; and Wiss, 1989) and three studies related to reading impairment³ (Bournot-Trites & Denizot, 2005; Geva & Clifton, 1994; MacCoubrey, et al. 2004). We begin with studies on language impairment.

Language Impairment

In order to examine the suitability of immersion for students with language impairment, Bruck (1978, 1982) identified sub-groups of grade 3 immersion and non-immersion students who were “impaired” or “normal” in their L1 development. Classification was based on teachers’ judgments, an oral interview, and a battery of diagnostic tests. Bruck then tested the students on literacy and academic achievement tests. She found that the impaired immersion students scored at the same level as similarly impaired students in the English program, and both groups scored lower than their typically-developing peers in the same programs, as would be expected from the language status of the impaired students. At the same time, the impaired immersion students had developed significantly higher levels of proficiency in French than both sub-groups of non-immersion students (impaired and typical) who were receiving conventional

³ Wiss (1993) conducted a study on poor readers in French immersion; however, the Canadian Journal of Special Education in which this report appeared contained an incomplete version of the report and, in particular, the Results Section was missing.

French-as-a-second-language (FSL) instruction. In sum, and as was found in the case of students with low levels of academic ability, students with low levels of first language ability demonstrated the same levels of English language development and academic achievement in immersion as similarly impaired students in the English program. At the same time, participation in the immersion program had benefited the impaired students with significantly superior French language proficiency in comparison to students receiving conventional FSL instruction. Bruck recommended that students with learning disabilities be included in immersion programs and given appropriate support services. While these findings are important and useful, it would be important to examine the progress of students with more specifically defined forms of language impairment since, arguably, the operational definitions used by Bruck do not reflect current thinking about language impairment; nor do they capture the full range of language impairment that might cause problems for school children (Leonard, 1998).

For purposes of this review, research by Trites is included in this section on Language Impairment since his findings are often presented as contradictory to those reported by Bruck (Trites and Price, 1978/79, 1984). However, there are reasons to believe that the learners examined by Bruck and Trites had different kinds of learning impairments, and this may account for the inconsistency in their results (Bernhard, 1993). Indeed, Trites (1984, p. 126) himself believed that the group of students he examined did “not have a language disability in English and as such is vastly different from the type of child investigated by Bruck”.

In the first of a series of studies, Trites (1976; see also Trites & Price, 1978/79) examined 32 anglophone children in primary French immersion who were experiencing difficulty or had switched to an English program owing to academic difficulties. All of these children had been referred to the Neuropsychological Laboratory of the Royal Ottawa Hospital for clinical

assessment and there they were administered an extensive battery of tests. Their performance was compared to that of seven comparison groups of students, each made up of 32 students. The immersion and comparison groups were equated on age, sex, and IQ, as much as possible. What all of these student groups had in common was that they were having difficulty in school. These seven comparison groups were included to determine if students experiencing difficulty in immersion had a unique risk profile in comparison to other students who were experiencing academic difficulties. For three of the comparison groups, language was a factor, namely, anglophone students in French language schools, children from minority ethnic groups who were in English language schools, and francophone children in French language schools. The remaining four comparison groups were: children with a reading disability, hyperactivity, behavioral or personality problems, and minimal brain dysfunction.

To summarize a great deal of data and complex statistical analyses, Trites and Price's results indicated that "The French immersion group in comparison with the other learning difficulty groups could be characterized as having a high IQ, no evidence of a particular or perceptual deficit, and having above average motor and sensory functions" (Trites & Price, 1978/79, p. 78-79). However, the French immersion group performed distinctly different from the comparison groups on one particular test -- the Tactual Performance Test, a test of complex psychomotor problem-solving ability. Trites and Price contended that performance on this test is associated with functioning of the temporal lobe regions of the brain and that the depressed performance of the immersion students on this test was indicative of developmental immaturity in this area of the brain. Because the immersion students alone had difficulty on this test, Trites and Price argued that this indicated that the immersion students had a unique at-risk profile that

made learning in immersion difficult; they did not explicate precisely how or why this was the case.

Since the students in Study 1 had been referred for clinical assessment, they might not have been representative of all immersion students who were experiencing academic difficulties. Therefore, Trites and Price (reported in Trites, 1984) carried out a second study with students who had been referred for clinical assessment. It included 16 students who had dropped out of immersion and 16 immersion students who had been in the same immersion class as the “drop-outs” but continued in the immersion program; the students who remained in immersion were matched with the drop-outs on age and sex. The drop-outs had transferred to English primarily because of learning difficulties. The diagnostic battery from Study 1 was administered to all students in Study 2.

In brief, the test profile of the drop-out students in Study 2 was substantially different from that of the students who remained in immersion, and their test profile replicated the unique pattern that had been found for the immersion group who were experiencing difficulty in Study 1. Trites and Price argued that these results confirmed their earlier conclusions. In contrast to Bruck’s recommendations, Trites and Price (1978, p. 888), when responding to the question “Should the child who is experiencing difficulties in Immersion be switched to the regular English program?”, replied “The answer to this question is a very definite “YES”” (emphasis added by Trites and Price).

In yet another study, Trites (1984) undertook to devise a diagnostic battery that would predict success or failure in primary French immersion programs based on student test results prior to entering immersion (see Trites & Price, 1978, 1979, 1980, for full reports). Trites collected extensive background information about 200 anglophone students from teachers and

parents when the children were 4-years of age and enrolled in an English language kindergarten program, prior to entering a French immersion program at age 5. In the Fall of the following year, when the students were 5 years of age and enrolled in French immersion for the first time, they were administered the Early Identification Assessment Battery. The teacher/parent information collected in 4-year old Kindergarten and test results collected in the Fall of 5-year old Kindergarten were subsequently used to predict student performance in Grade 1 and later in Grade 4. For the sake of brevity, comments here will be limited to what appear to be striking differences between the results of the early identification study and Trites' earlier studies. In all of the analyses of this study, Trites found that the unsuccessful immersion students scored significantly lower than the successful students on ALL 14 tests in the assessment battery. The battery included tests that tapped auditory discrimination; quantitative abilities and knowledge; letter and numerical recognition; comprehension, recall and interpretation of oral language; and problem solving; among others.

Trites and Price's research has been criticized on methodological and logical grounds, most notably by Stern et al. (1976) and Cummins (1984). Cummins called into question Trites and Price's claim that the immersion students' depressed performance on the Tactual Performance Test is related to impairments in the temporal lobes since Trites provided no evidence to support this claim. He also questioned the logic of Trites and Price's argument that difficulties in French immersion are linked to temporal lobe function as assessed by the Tactual Performance Task. More specifically, Cummins argued that it is likely that performance on the Tactual Performance Task, even if it linked to functioning of the temporal lobes, is probably related to the **right** temporal lobes which are involved in spatial processing and not to the **left** temporal lobes which are related to language processing. It is difficult to reconcile the

immersion students' language and academic problems with their depressed performance on a test that assesses spatial/tactual processing. Moreover, as noted earlier, Trites' claim that students who are likely to have difficulty in immersion are at-risk because of a specific developmental lag in the temporal lobes is difficult to reconcile with the findings from the early identification study that their performance on all diagnostic tests was significantly lower than that of successful immersion students.

Wiss (1989) concurred with Trites and Price that there may be a subgroup of children for whom immersion, especially early immersion, is not suitable because their cognitive and/or linguistic immaturity makes it difficult for them to learn a second language and to learn through a second language. Wiss has argued further that it is important to distinguish between students who are experiencing difficulty in immersion because of a specific learning disability versus those who are developmentally immature. Students who are developmentally immature might be better advised to avoid early immersion and attend late immersion; a similar suggestion was made by Trites and Price (1978/79, p, 80). Early immersion might be better suited for students with a learning disability, according to Wiss, a recommendation that accords with Bruck. Wiss's suggestions are based on her analysis of the performance of one girl who was experiencing difficulty in immersion; the child was in Grade 1 and was 6years, 2 months old at the time of Wiss's assessment. Clearly, more research is needed to substantiate Wiss's results and her interpretation of them.

Reading Impairment

It is important to distinguish between students who are at-risk for reading difficulty versus those who would be considered reading impaired. It is generally possible to identify students with a reading impairment only in the middle elementary grades when most children

have mastered basic reading skills and are well on their way to reading fluently. Students are generally considered to have a reading impairment if they score more than one standard deviation below their grade level on tests of reading. Students can be identified as being *at-risk* for reading impairment much earlier, in Kindergarten or Grade 1, and possibly earlier. This can be done by examining their performance on tests that predict later reading ability; e.g., testing knowledge of letter names and sounds, phonological awareness, and phonological recoding as measured by children's speed of access to phonological codes for words, numbers or picture names (see National Reading Panel, 2000). Many students who are identified as at-risk for reading difficulty may become proficient, fluent readers, especially if provided additional support early in the early grades. No research was identified that examined students with reading impairment in immersion programs. One study was identified that examined immersion students who had poor reading skills (Geva & Clifton, 1994) and two studies were identified that examined immersion students who were at-risk for reading difficulties (Bournot-Trites & Denizot, 2005; MacCoubrey, Wade-Woolley, Klinger, & Kirby, 2004).

Geva and Clifton (1994) examined the reading of good and poor readers in Grade 2 immersion in comparison to good and poor readers in a regular English program. The goals of their study were to examine (1) how good and poor readers in early French immersion compare to good and poor readers in an English program, and (2) the reading skills of good and poor readers in immersion in their first and second languages. At issue is whether poor readers in immersion are at greater risk than poor readers in an English program and whether poor readers in immersion have the same reading profiles in their two languages. Two major findings are of interest for our purposes:

- when the scores of the immersion students in English and French reading were examined, there were positive and significant correlations between virtually all first and second language reading measures, including measures of accuracy, speed and comprehension. For example, the correlation between reading level in English and French of immersion students was a very high .84; and the correlation between story retelling in English and French was .77. In other words, immersion students who read well in English also read well in French and students who read poorly in English also read poorly in French.
- When the reading profiles of the students in French immersion and the English program were compared, there were no significant differences between the French immersion readers and the English program readers WITHIN THE SAME READING LEVEL on measures of accuracy, such as word recognition, omissions, repetitions, and insertions (as revealed by miscue analysis). However, there were differences between the immersion and English program students on measures of speed and fluency, with the English students demonstrating faster and more fluent reading. This was true for both good and poor readers in the immersion group, arguing that immersion students may require more practice to attain native-like levels of accuracy and fluency in reading. In fact, it is typical for immersion students to score lower than English program students on reading tests prior to the introduction of English reading instruction in immersion. The students in this study had not yet been given English reading instruction at the time of testing (Geva, pers. comm.; March 28, 2006).

MacCoubrey and her colleagues (2004) sought to identify measures that predict risk for difficulty in the French and English reading of Grade 1 and 2 French immersion students. They administered a battery of predictor tests in English, all of which have been shown to be good

predictors of reading ability in English as a first language, to French immersion students in the Fall of Grade 1. The tests assessed phonological awareness, phonological recoding, and phonological short term memory. Reading achievement was assessed at the end of Grade 1 and then again in late Fall of Grade 2. The reading tests assessed word reading skills in English and in French. Important findings from this study are:

- The same kinds of measures predict English and French reading achievement in immersion students, and these are the same kinds of measures that predict English reading achievement in students in English programs. In other words, what is important in learning to read French as a second language is fundamentally the same as what is important in learning to read English as a first language, and what is important in learning to read in an immersion program is essentially the same as what is important in learning to read in an English-only program.
- French immersion students who were at-risk for reading difficulties could be identified using either English or French language tests and this could be done early in the student's education. This is important because it means that risk for reading difficulty in French immersion can be identified early by using identification tests in English, before students have had extensive exposure to French. It is important to point out that MacCoubrey et al. examined word-level reading skills, and it is possible that a different constellation of predictors is important when it comes to reading comprehension.

Bournot-Trites and Denizot (2005) examined whether the same kinds of predictor measures in English and French would differentiate immersion students who were considered at-risk for reading difficulty; the students were in Kindergarten and Grade 1. They found that immersion students who were considered at-risk according to their performance on a set of

English tests (including knowledge of letter names, phonological awareness, and word and non-word repetition) were also identified as at-risk based on their performance on a similar battery of French language tests. These results, like those of Geva and Clifton and MacCoubrey et al., attest to significant cross-linguistic relationships in learning to read a second language (see also Comeau, Cormier, Grandmaison, & Lacroix, 1999, for corroborating evidence from a study on cross-linguistic effects for a group of French immersion students with mixed English-only and English-French backgrounds). Bournot-Trites and Denizot also found that the immersion students in Kindergarten and Grade 1 scored significantly higher than the English program students on both English reading tests and tests of phonological awareness and verbal memory; the latter are significant predictors of word reading ability. Bournot-Trites and Denizot argue that these results support the findings of other researchers that bilingualism enhances metalinguistic awareness which, in turn, promotes reading acquisition.

INTERVENTION STUDIES

Two studies were identified that examined the effectiveness of interventions for students experiencing difficulties in French immersion, one examined an intervention for students with mild reading difficulties (Rousseau, 1999) and one for students with learning disabilities (Bournot-Trites, 2004). Also reviewed is a study by MacCoubrey, Wade-Woolley, & Kirby (in prep.) that examined the effectiveness of training on immersion students' phonological awareness in English and French; while this study did not examine the effects of training on reading per se, it is relevant to the question of the effectiveness of training in immersion students' second language on their phonological awareness in that language, an important component of early acquisition of word decoding skills in French. Rousseau used a qualitative, case study approach to examine student, parent and teacher satisfaction with a two-year

transition program for French immersion students with learning disabilities. The student participants were diagnosed in accordance with the Association of Learning Disabilities of Canada definition of learning disability: they had above average intellectual ability; there were discrepancies in their academic performance, with both strengths and weaknesses; and there were minimal, if any, difficulties with attendance and behavior. The assessment was conducted in English and only children who did not use French at home were included. There was a small sample of 13 students in a split Grade 3/4 class. The intervention program emphasized (a) strategy instruction (organization, study habits, peer assisted learning, problem-solving, and proof reading strategies), (b) developing student awareness of their learning styles, (c) instruction in English reading, and (d) communication between home and school.

Reactions to the intervention were solicited from students and the teachers and parents of these students using a variety of open-ended, qualitative methods, such as interviews and self-reports. No objective assessment of reading outcomes was carried out and, thus, the results of this study can be interpreted only as subjective impressions on the part of participants. The students reported improvements in their self perceptions and in school-related task performance. Parents also reported a high level of satisfaction with the program and indicated that “the children gained a lot of control over their disability and were now more able to be active learners. They became aware of their strengths and weaknesses and were not as afraid of failing as they had been.” (p. 11). The parents attributed the success of the program to small class size, the provision of learning strategies instruction so that their children could cope with their learning difficulties, and their and their children’s increased awareness of the nature of LD. The participating teachers agreed with parents that the program was a success and, moreover, they

believed that their children had made progress in academic and non-academic domains as a result of the intervention.

Bournot-Trites (2004) carried out a questionnaire-based evaluation of a peer tutoring program for Grade 2 French immersion students who were experiencing mild reading difficulties. The peer tutors were Grade 5 and 6 French immersion students who underwent a three-day training program. The tutees were determined to have mild reading difficulties based on the number of words they were able to read on a list of 160 words of increasing difficulty. Student performance following peer-tutoring was assessed using the same list of words. Tutoring focused on word reading skills. Questionnaires designed to assess satisfaction with the program were distributed to tutors (n=61), tutees (n=35), and the teachers and parents of tutors and tutees. All participants indicated their level of satisfaction with the intervention on a series of questions using 5-point rating scales. Evaluation results were in the form of average level of satisfaction with the various components and outcomes of the program which were included in the questionnaire.

The tutees showed significant improvement in word reading from pre- to post-test, but because there was no control group, it is not possible to determine if their improvement in word reading was due to the intervention or typical developmental changes. All participants (including parents and teachers) expressed positive attitudes toward the program and its effects. In brief, the tutees felt more confident and efficient in reading and more motivated to read. Even the tutors reported benefits with respect to self-esteem, interest in reading, and reading ability. While it is not possible to ascertain the true effects of this intervention, these results attest to the feasibility of providing intervention for French immersion students with (mild) reading difficulties. The question remains whether peer-tutoring could be used effectively with students

with more severe reading problems and whether it produces significant gains in reading performance.

MacCoubrey et al. (in prep.) examined the effect of instruction in French phoneme blending and segmentation on phonological awareness in French and English of Kindergarten immersion students who were considered at-risk for reading difficulty. Risk for reading difficulty was based on the students' performance on tests of English phonological awareness, English letter knowledge, and word reading. More specifically, the at-risk students scored at or below the 40th percentile on both phonological awareness and letter knowledge tests in English and were able to read fewer than two words from the Word Identification subtest of the Woodcock Reading Mastery Tests-Revised, Form G (Woodcock, 1998). In question in this study is whether early intervention in French can be effective for English-speaking immersion students who are at-risk for reading difficulty. Treatment extended over 12 weeks and training sessions consisted of four components including warm-up activities, letter-sound activities, and activities that made explicit the role of segmentation and blending in the alphabetic code; all training was in French, the students' second language. The performance of a control group of students who did not receive this treatment was also examined. These students were engaged in activities over 12 weeks with the same games, puppets and word lists used with the treatment group, but they did not receive instruction in phonological awareness. Their activities focused on vocabulary building.

Comparison of pre- and post-treatment results indicated that students in the treatment group had significantly greater improvement in phonological awareness in both English and French than the control students. The treatment students displayed this improvement in English, as well as French, even though training had been in French only. However, the treatment group

did not show a significantly larger improvement in letter-sound knowledge in either French or English. The authors suggest that the lack of a group difference in letter-sound knowledge may have resulted from both groups having had letter-sound instruction in school.

SUMMARY AND RECOMMENDATIONS

This review of research on the suitability of immersion for students who are at-risk due to below average levels of academic ability and/or learning disabilities has revealed that there is extremely little empirical research on students with such risk profiles. There is similarly little research on the effectiveness of intervention programs for immersion students experiencing difficulty of any sort. Moreover, much of the empirical evidence is dated; for example, the research carried out by Genesee was conducted in the 1970s, while Bruck and Trites' work was carried out in the 1970's and 1980s. Our understanding of learning disabilities in monolingual children schooled in their native language has advanced significantly since that time. These advances in our understanding are not reflected in much of the research reviewed here, although the research on reading is more recent and does reflect current thinking. Two research projects are currently underway that will serve to expand our understanding of individual differences in reading attainment among immersion students, including students who might be at-risk for reading and/or language impairment – for example research by Jared, Cormier, Levy, and Wade-Woolley is examining reading development in French immersion students and research by Erdos, Genesee and Savage at McGill University is examining the language, reading, and academic development of students who are at-risk for language and/or reading disability in primary French immersion programs.

In summary, research by Genesee and Bruck on immersion students who are at-risk in school due to below average levels of academic ability indicates that such students are not

differentially handicapped in their native language and academic development in comparison to groups of similar students in English-only programs. At the same time, students with academic difficulties can benefit from immersion in the form of increased levels of functional proficiency in French. There is evidence from a number of researchers that immersion students with academic difficulties who are transferred to an English program as a consequence of academic difficulty show improvements in performance and self-esteem (Mannavarayan, 2002; Parkin, Morrison, & Watkin, 1987; Waterson, 1990; Wiss, 1989). However, since none of these studies, except Bruck's, included comparison groups of immersion students who remained in immersion and received additional support, it remains to be seen if the improvements reported in these studies can also be realized by transferring students who are experiencing difficulty in immersion and providing them with additional, appropriate support.

Findings from research on immersion students with learning disability related to language learning are clearly limited and have produced inconsistent results. The limitations are due to the small number of studies and the lack of a common definition of learning disability. It is quite possible that Bruck's and Trites' findings were inconsistent because they looked at different kinds of learners, with Bruck looking at students with language specific impairment and Trites and Price and Wiss at students with a maturational or developmental lag involving language learning. Methodological problems with the studies by Trites and Wiss limit the conclusions that can be drawn from their research (see also Bernhard, 1993, for an analysis of Trites's and Bruck's research). All of these studies are limited because their definition of learning disability does not reflect current thinking by researchers and professionals in the field.

Bruck's results suggests that students with delays (and possibly impairments) in first language acquisition are not differentially disadvantaged in immersion programs in comparison

to students with similar first language profiles who attend English language programs. At the same time, it appears that such students attain levels of academic achievement that are commensurate with their learning disabilities and that they can also benefit from immersion in the form of enhanced competence in French. Clearly, more research is called for to assess the validity of these conclusions using definitions and assessment tools that reflect contemporary knowledge about language impairment in its various manifestations.

A study by Paradis, Crago, Genesee and Rice (2003) on simultaneous bilingual children with specific language impairment (SLI) is relevant to the broader issue in question here; namely, are children with specific language impairment at differential risk for language difficulties if they learn two languages? In their study, Paradis and her colleagues examined the linguistic profile of bilingual English-French children with SLI using assessments of impairment that are widely used to diagnose monolingual English and French-speaking children with SLI. The performance of the bilingual children, who were approximately 7 years of age at the time of the study, was compared to that of monolingual English and monolingual French children who had also been diagnosed with SLI. This study sought to answer two basic questions: (1) Are the linguistic impairments of bilingual children with SLI the same as those of monolingual children with SLI? and (2) Do bilingual children with SLI experience more severe impairments than monolingual children with SLI? These two questions were motivated by the often-held belief that children with SLI are likely to experience more severe and potentially unique problems as a result of learning two languages. As a result of such beliefs, parents of such children are often counseled to limit the child's exposure to only one language, be it at home or in school, on the grounds that the prognosis for their language development is better in a monolingual than a bilingual environment.

There are two general findings from this study that are of particular importance:

- 1) the bilingual children with SLI exhibited the same linguistic profiles as the monolingual children with SLI; being bilingual did not result in a unique pattern of impairments
- 2) the linguistic impairments of the bilingual children with SLI were of the same magnitude as those of the monolingual children with SLI; being bilingual did not seem to result in greater impairment.

The results of this study support Bruck's overall findings insofar as they indicate that bilingualism does not put children with impaired capacities for language learning at greater risk for language learning difficulties. Since the diagnostic criteria used by Paradis et al. reflect contemporary definitions of specific language impairment, their findings go some way toward addressing one of the criticisms of Bruck's research. At the same time, additional research is called for to verify the generalizability of Paradis et al.'s results to other bilingual children and to examine alternative forms of language impairment. It also remains an open question whether education through a second language puts children with SLI at differential risk for academic and language difficulties since this issue was not addressed directly by Paradis et al.

In contrast to Bruck's recommendations, Trites and Price, along with Wiss, have proposed that there is a specific sub-group of learning disabled students who have delays in cognitive and perhaps even neurological development in certain critical brain areas who are not suitable candidates for early immersion, although they may be suitable for late immersion. However, the conclusions of their research are best regarded as possibilities until such time as more substantial and less ambiguous evidence is available to support them.

No research on immersion students with reading disabilities was identified. Three studies were identified that examined immersion students who were either at-risk for reading difficulty

(Bournot-Trites & Denizot, 2005; MacCoubrey et al., 2004) or had poor reading skills (Geva & Clifton, 1994). The findings from MacCoubrey et al. and Bournot-Trites and Denizot indicate that immersion students who are at-risk for reading difficulty have the same risk profile whether they are assessed in English or French and that, in effect, such students have an underlying risk for reading difficulties that is likely to show up whether they participate in English-L1 programs or French-L2 programs. This follows from the fact that the same kinds of processes are important in first and second language reading acquisition and that there are significant crosslinguistic correlations in these abilities (Comeau et al., 1999). Indeed, Geva and Clifton's study on immersion students with poor reading skills supports this expectation.

The findings from these three studies are consistent with the results of the report of the National Literacy Panel on Language-Minority Children and Youth (August, in press). Following an extensive review of research carried out since 1980 on reading acquisition in minority language students who were educated in English-as-a-second language in the U.S.A., the Panel reported that there are significant crosslinguistic factors in first and second language reading acquisition. It follows that students who are at-risk for reading difficulty in their first language are likely to be at-risk for difficulty in learning to read a second language. The findings from these reading studies mirror the patterns reported by Bruck and Genesee which also suggest that students who are likely to have problems in school owing to low levels of intellectual or first language abilities are likely to have similar problems in English-only or French immersion programs. In other words, all of this research suggests that these kinds of learners are not likely to be differentially handicapped in immersion.

Three intervention studies were identified; one examined students with learning disabilities (Bournot-Trites, 2004); one examined students with reading difficulties (Rousseau,

1999); and one examined the effectiveness of phonological awareness training in French on the phonological awareness skills of at-risk students in French immersion. The Bournot-Trites and Rousseau studies reported high levels of satisfaction with the interventions under investigation by students, teachers, and parents. These studies have methodological limitations, however. The Rousseau study did not assess the students' reading performance after intervention and neither study included comparison groups so that it is not possible to ascertain with certainty whether these interventions produced significant improvements in student performance. MacCoubrey et al. found that immersion students with low levels of phonological awareness and word reading skills in English showed significantly greater improvement in phonological awareness (but not letter-sound knowledge) in French following phonological awareness training in French than a control group that did not have such training. Although this study did not include tests of word reading and, thus, cannot determine if the treatment improved reading, these results are of relevance because they demonstrate a significant improvement in phonological awareness in French and phonological awareness is an important predictor of word decoding.

Recommendations for Future Research

Clearly, there is a need for research with respect to all of the issues discussed in this review. Specific recommendations include:

- 1) additional research on the academic and language development of immersion students with below average levels of academic achievement; such research would re-assess the findings from Genesee that were reported in 1976
- 2) research on the language and academic development of immersion students with language impairment; research by Bruck and by Trites were based on what would now be considered out-of-date conceptualizations of language impairment and the research by

Paradis and her colleagues did not look at the suitability of immersion for students with SLI

- 3) research on students with reading disabilities; ongoing longitudinal studies by Erdos et al. and by Jared et al. should expand our understanding of the academic, linguistic and reading development of anglophone students who are at-risk for reading difficulties and those results should become available soon
- 4) longitudinal studies of at-risk students to examine their short- and long-term achievement. In domains such as reading, short-term research tends to focus on word recognition skills and fails to shed light on reading comprehension; it is quite likely that different constellations of skills and factors influences outcomes in these two aspects of reading
- 5) research on the effectiveness of interventions for students who experience difficulty in immersion due to low levels of academic ability and/or reading and language impairment. It is imperative that this research systematically examine student outcomes as a result of intervention and that comparison groups of students without intervention as well as comparison groups in all-English programs be included. It is further recommended that alternative modalities for such intervention and, in particular, bilingual versus monolingual (in French) interventions, be examined carefully
- 6) Related to recommendation 4, it is recommended that comparative evaluations be undertaken to examine the relative merits of intervention for immersion students experiencing difficulty versus transferring such students to English-only programs.

Policy Recommendations

While acknowledging the need for further research on all aspects of the suitability of immersion for at-risk students, we must also acknowledge the immediate need of parents, teachers, and educational professionals to make important decisions about which students to include in immersion, whether students should be retained if they have difficulties after they enter immersion, and what kind of special support they should be given, and when. In the absence of definitive empirical, research-based answers to such questions, an analysis with respect to possible risks and benefits based on current knowledge provides an alternative strategy for decision-making. From the point of view of possible risks, the fundamental question is “Does research indicate that at-risk students experience significant costs and, in fact, are likely to be differentially disadvantaged in immersion in comparison to what would likely happen were they in an all-English program?” From a benefits point of view, the fundamental question is “Does research indicate that at-risk students can benefit from participation in immersion programs?” Answers to these questions are independent of one another since it is possible that students could experience costs and no benefits, benefits and no costs, or some benefits and some costs. Each of these questions is addressed in turn now.

Research evidence that at-risk students are at differential risk in immersion is scant at best and methodologically weak. In particular, Trites’s interpretation of his results has been questioned by a number of researchers on methodological and logical grounds, and there is a lack of consistency between the results of his early identification study and his other studies. Wiss’s argument that a developmental delay puts some students at differential risk in early immersion is based on qualitative evidence for a single child and is, thus, of questionable generalizability. Reports of improvements in the performance of immersion students who transfer to all-English

programs provide questionable and only indirect evidence that immersion is not suitable for at-risk students because none of these studies included a control group of at-risk students who remained in immersion. We do not know if the transfer students received additional support in the English program and, as a result, we do not know what was responsible for the reported improvements in the transfer students. In sum, while it is still possible that immersion is not suitable for some students, at present, the evidence does not allow us to identify beforehand who these students are.

Research evidence that at-risk students can benefit from immersion is more substantial, albeit limited as well. In particular, research by Genesee and by Bruck, with respect to both low ability and learning disabled students, indicates that such students are not at differentially greater risk in immersion than similar students in all-English programs. To the contrary, at-risk students with academic and language learning challenges can acquire substantial communicative competence in French while maintaining parity in their academic and language development with similarly challenged students in all-English programs. Studies that have examined at-risk and poor readers in immersion report that there are significant crosslinguistic correlations between the predictors of reading ability; in other words, students who are good readers in English are likely to be good readers in French, and poor readers in English are likely to be poor readers in French. The reading studies provide no evidence to support the argument that students at-risk for reading difficulty are likely to be at differentially greater risk in immersion.

On balance, the present evidence supports efforts to include and retain at-risk students in immersion. Findings from research on interventions for immersion students with difficulties, while limited, argue further that at-risk students who are prone to transfer to an English program because of academic difficulty might remain in immersion if given appropriate intervention and,

as a result, may attain enhanced second language competence. At present, many, if not most, students who experience difficulties in immersion are compelled to transfer to an English program for lack of appropriate additional support in immersion. In brief, at present, there is insufficient evidence to support decisions to exclude at-risk students from immersion on an a priori basis. This of course is true for students who are at-risk for the reasons considered in this review and does not apply to students with other risk factors that have not been reviewed here.

The decision to include, retain and provide additional support for at-risk students in immersion should also consider socio-cultural and family circumstances. Arguably, learning French is substantially more useful in Montreal than in settings where there are few francophones and few job or other opportunities to use French. Learning both French and English in school is also, arguably, more important for students in families with dual ethnolinguistic roots. Thus, decisions to recruit, retain and support at-risk students in immersion might be different if they have dual ethnolinguistic backgrounds or live in bilingual or francophone regions of the country. Of course, consideration must always be given to individual learner profiles and circumstances. Thus, it is advisable to monitor the performance of at-risk immersion students on a regular basis in order to determine if their program placement should be re-evaluated. Evidence that a particular student is happy and progressing in accordance with his or her individual capacities despite difficulty would support continuation in immersion; evidence that a student is experiencing difficulty in language, reading or academic domains and is having difficulty coping with his or her difficulties would call for a re-assessment of the student's placement. Indeed, a major consideration should be the child's sense of well being and success in immersion. Students who are unhappy in immersion or feel that learning through French is a burden are serious candidates for transfer, even though they might be doing well academically.

In any case, a general policy regarding the recruitment and retention of at-risk students in immersion should make provisions for decision-making on a case-by-case basis, with periodic re-assessment of progress by students who are considered to be at-risk.

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APPENDIX A
JOURNALS THAT WERE SEARCHED MANUALLY
(from 1999)

Applied Psycholinguistics
Canadian Modern Language Review
Canadian Journal of Education
International Journal of Bilingual Education and Bilingualism
American Journal of Speech-Language Pathology
Canadian Journal of Behavioural Sciences
Journal of Speech, Language, and Hearing Research (formerly the Journal of
Speech and Hearing Research)
Journal of Education for Students Placed at Risk

APPENDIX B
KEY WORDS USED TO SEARCH ELECTRONIC DATA BASES

Academic ability and bilingual education
At-risk and bilingual
At-risk and bilingual education
Bilingual education
Cognitive ability and immersion
Foreign language immersion
French immersion
Immersion
Immersion and academic ability
Learning disabled and immersion
Learning disabled and bilingual
Learning disabled and bilingual education
Second language immersion
Special education and immersion
Special education and bilingual education
Special needs and immersion
Special needs and bilingual

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