

The Suitability of Early French Immersion Programs for the Language-Disabled Child

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On a évalué tous les ans, jusqu'à la fin de leur 3^e année, des enfants qui éprouvent des difficultés de langage inscrits dans des classes maternelles d'immersion en français, afin de déterminer si ces programmes leur conviennent.

Leurs résultats à plusieurs épreuves académiques, cognitives et linguistiques sont comparés à ceux d'un groupe d'enfants inscrits dans des programmes d'anglais ayant aussi des difficultés de langage, ainsi qu'à deux groupes-contrôles d'enfants normaux. Les comparaisons ont indiqué que ces enfants acquièrent les bases de leur langue maternelle et apprennent les aspects fondamentaux de la lecture, de l'orthographe et des mathématiques; ils réussissent également dans l'étude de la langue seconde.

On interprète les données dans le sens d'une continuation du programme d'immersion avec une aide appropriée en ce qui concerne le rattrapage et *non* d'un retrait des enfants de ces programmes d'immersion.

In 1965 an experimental bilingual program for young elementary school children was introduced in a small community outside of Montreal. The program, now referred to as "Early French Immersion," involved instructing unilingual anglophone children in French. In kindergarten and grade 1 the children received all their instruction in their second language — they were taught all their basic skills in French. Then in grade 2 English language arts was introduced for one hour a day. Each successive year more and more English was introduced into the curriculum until in grades 5 and 6 the two languages were used equally in the program. The innovators of the program believed that by using French as a medium of communication, rather than explicitly teaching it as a subject, they would help children become proficient in the second language. Since 1965, the popularity of the program as a vehicle for teaching French has spread, and there are currently many early French immersion programs throughout Canada (Lambert & Tucker, 1972; Swain, 1978).

A number of evaluations have documented the progress and development of these early French immersion students (Swain & Bruck, 1976; Swain, 1978). Results of numerous studies show that these children become proficient in the reading, writing, and speaking of French without any loss of competence in their first language. Furthermore they progress normally in cognitive and academic areas.

In most of these evaluations, the subjects were of average intelligence,

had no particular problems, and were from English-speaking middle-class backgrounds. As a result, one cannot make any firm statements about the suitability of the programs for children not sharing those characteristics (e.g. children of low intelligence, children from working-class homes, children from minority groups, and children with language disabilities). In a review of the few studies evaluating the suitability of French immersion programs for the different subgroups, Genesee (1976) concluded that the available data were at best preliminary and urged further research into those areas.

The present study investigates the desirability of early French immersion programs for children with language-learning disabilities. A child with a language disability is one who in spite of physical well-being, normal intelligence, and a healthy personality acquires language with painful slowness. Language-disabled children are relatively late in using words, in combining them, and in developing clear articulation and syntactic sophistication. They have problems in comprehending as well as producing speech. At school age, they lack facility in oral language and often miss the point of instructions, explanations, and informal conversations. A language disability is usually sufficient cause for school difficulty (Golick, 1977; Ingram, 1975; Morehead & Ingram, 1973).

This research project was initiated because of the very practical concerns of educational therapists regarding the best academic course for children with learning problems who are in French immersion programs. The primary question was whether such children should be left in the French immersion program or be transferred to an all-English program. There were two differing points of view. One group claimed that children with problems should be switched out of French immersion. It was argued that French immersion either caused or contributed to the problems (Trites, 1975); and that once the children were in an English program, they would have a much easier time and the problems would dissipate or disappear entirely. It was also felt that the children would be under much less pressure in the English stream, and as a result life would be smoother for them psychologically.

Conversely, another group claimed that children with problems should stay in French immersion programs. It was argued that such children, if switched, would have exactly the same problems in an English stream. Furthermore it was argued that "switching" would be detrimental to the child's self-esteem: the child would be marked as not succeeding, would be separated from friends, and would have to readjust to a new social-educational system. Finally, because knowledge of French is a necessity for social and economic survival in Quebec, and because the French immersion program produced students who were proficient in the second language, it was felt that the learning-disabled child should be left in the program in order to acquire these necessary skills. Removing children from the

French immersion program might very well jeopardize their future chances for survival in the province.

The present article is the second report of a longitudinal project, initiated in 1970, in which children with and without language problems are identified in English and in French immersion kindergartens and are then closely monitored to the end of their grade 3 year. In the first report (Bruck, Rabinovitch, & Oates, 1975) the investigators concluded that by the end of grade 1 the problem children in French immersion classrooms were not encountering any more difficulties than if they had been placed in an English classroom. It was felt that the children had a more difficult time from the end of grade 1 through some of grade 2 (possibly due to the introduction of English reading), but that by grade 3, school had become easier and the children with problems were faring well. However, the sample sizes on which these results were based were extremely small, and the conclusions were stated tentatively. In the present study the sample size has been increased and more definite conclusions can be drawn about the feasibility of French immersion programs for the language-disabled child.

METHOD

Experimental Design

In order to determine the feasibility of French immersion programs for children with language-learning disabilities, four different groups of children are selected in kindergarten and followed on a yearly basis until grade 3. The four groups are:

1. Children with language disabilities who are in French immersion programs (French problem — FP).
2. Children with language disabilities who are in English classes (English problem — EP).
3. A group of children with normal language development who are in French immersion programs (French control — FC).
4. A group of children with normal language development who are in traditional English classes (English control — EC).

The progress of all these children is monitored in the following areas from the middle of kindergarten until the end of grade 3: first- and second-language skills, cognitive development, and school achievement. Teacher evaluations of individual students are obtained at the end of each school year. The end of grade 3 has been selected as a cutoff because by that time children are expected to have acquired basic skills in reading, writing, spelling, and math; if any problems are to appear, they are likely to become apparent by this level.

Subjects

In October of each school year, kindergarten children attending 24 classes

(14 French immersion classes, 10 English classes) in 7 different schools are screened for language disabilities and normal language development.

A child was classified as having a problem when the following criteria were met:

1. The child's first language was English.
2. The teacher classified the child as having poor language.
3. On the basis of an interview with the child, the experimenter (a specialist in child language) judged that the child had a language problem.
4. On a diagnostic screening test, the child scored lower than 35 out of 59. This test, designed specifically for the project, included an object-manipulation test, a story-retelling test, and an imitation test. Requiring about 15 minutes to administer, the test was constructed in such a way that kindergarten children with normal language development would have little difficulty, whereas children with language disabilities would do poorly.
5. The child had normal intelligence. All project children were given the Wechsler Preschool Primary Scale of Intelligence (see below), and any child scoring below 86 on either the Verbal Scale or Performance Scale was eliminated from the project.

After the language-disabled children were identified, each was matched with a control child of normal language development, on the basis of sex, age in months, classroom teacher, and father's occupation. In addition, each control satisfied the following criteria:

1. The child's first language was English.
2. The teacher indicated that the control child's language seemed normal.
3. The experimenter, on the basis of an interview, judged the child's language to be normal.
4. On the diagnostic screening test, the child scored over 50.
5. The child had normal intelligence.

Because the incidence of language-learning disabilities is low, not enough children can be found in a single year to complete the subject selection procedure for the project. Also, because of attrition (children moving from the community, or switching from French to English classes) the sample has to be continually replenished. In fact, subjects have been screened in kindergarten every year from 1970 to 1976. By June 1980 all project subjects will have reached grade 3, at which time the project will be completed.

Tests: English Testing

The children are given a range of tests in the winter of each school year that assess English-language skills, academic achievement in English, and cognitive functioning. (Except for math tests, all testing is done on an individual basis.)

In *kindergarten* the children are administered (1) WPPSI: Full Scale Wechsler Preschool and Primary Scale of Intelligence; (2) PPVT: Peabody Picture Vocabulary Test Form A; (3) NSST: Northwestern Syntax

Screening Test; (4) ITPA: Illinois Test of Psycholinguistic Abilities – Selected Subtests: Auditory Reception, Visual Reception, Visual Sequential Memory, Auditory Association, Auditory Sequential Memory, Visual Association, Grammatic Closure; (5) Golick Sentence Imitation Test (1977).

In *grade 1* the children have the following tests: (1) PPVT Form B; (2) NSST; (3) Golick Sentence Imitation; (4) WISC Vocabulary: subtest from the Wechsler Intelligence Scale for Children; (5) Similarities subtest from the WISC; (6) ITPA: 7 subtests given in kindergarten plus Auditory Closure and Sound Blending; (7) Metropolitan Math Test: subtest of Metropolitan Achievement Test, Primary Battery I.

In *grade 2* the children are given (1) PPVT Form A; (2) NSST; (3) Golick Sentence Imitation Test; (4) WISC Vocabulary; (5) WISC Similarities; (6) ITPA: 9 subtests given in grade 1; (7) Math subtest of Metropolitan Achievement Test, Primary Battery II; (8) WRAT: the three subtests of Reading, Math, and Spelling from the Wide Range Achievement Test; (9) Spache Diagnostic Reading Scales.

In *grade 3* the children are given (1) PPVT Form B; (2) Golick Sentence Imitation Test; (3) Full Scale WISC; (4) ITPA: 9 subtests; (5) Math Computation and Problem subtests of the Metropolitan Achievement Test, Elementary Battery; (6) WRAT (3 subtests); (7) Spache Diagnostic Reading Scales.

To obtain additional information on the students' English academic and language skills, the grades 1, 2, and 3 teachers were asked to evaluate the students on a number of scales. Specifically, the grades 1, 2, and 3 English teachers of the EC and EP subjects were asked to evaluate these students' performance in reading, writing, math, and oral and receptive language. Similarly the grade 2 and grade 3 English teachers of the FP and FC subjects were asked to evaluate these subjects' performance in reading, writing, and oral and receptive language skills.

Tests: French Testing

French-language skills are assessed in June in grades 1, 2, and 3 by the following means.

- *Teacher Ratings or Interviews.* French immersion teachers are asked to rate each FP and FC child's level in reading, writing, math, expressive language, and receptive language.
- *OISE French Listening Comprehension Test Level 1.* All children in the English and French groups are given this test.

RESULTS

English-Language Skills, Cognitive Functioning, Academic Achievement

Results are presented in 3 sections: (1) the progress of the children from kindergarten to grade 1, (2) the progress of the children through to grade 2, (3) the progress of the children through to grade 3.

Because of the number of tests given, results are grouped and discussed under the following categories: (1) Intellectual Functioning, (2) Abstract Reasoning Skills, (3) Grammatical Skills, (4) Visual Skills, (5) Auditory Skills, (6) Math, Reading, and Spelling Skills.

The teacher interview data are used to supplement the test results.

Three-way analyses of variance with repeated measures were run on each of the dependent variables: language ability (problem vs. control), language of instruction (French vs. English), and grade of testing. For the grade 1 analysis, grade of testing had two levels — kindergarten and grade 1; at grade 2 there were three levels — kindergarten, grade 1, and grade 2; at grade 3 there were four levels — kindergarten, grade 1, grade 2, and grade 3.¹ Because the same children were being retested at each grade level, this variable received repeated measures.

In order to simplify the huge number of statistical analyses carried out, means will be reported for each test; only results having statistical significance at the .05 level or higher are discussed; no *F* values, *P* values, or degrees of freedom values are listed; and a summary table of significant results is provided.

Progress of Children from Kindergarten to Grade 1

This analysis focusses only on children screened and tested in kindergarten and tested again in grade 1: 23 children in the French Problem Group; 27 children in the French Control Group; 22 children in the English Problem Group; and 23 children in the English Control Group.

The means for all the test scores are presented in table 1, and the summary of the statistical analyses in table 2.

Intellectual Functioning

On all three scales of the WPPSI, the control children obtained significantly higher scores than the language-problem children. On the Performance and Full Scale scores there was also a significant language-of-instruction effect, with French immersion children performing better than control children. On the Performance Scale there was a significant interaction indicating that the discrepancy between English and French problem groups is greater than that found between the two control groups. This constellation of results suggests the following:

1. In terms of *language ability*, the groups are well matched. The EP and FP groups have the same severity of disability.
2. It appears, however, that the EP group differs from the FP group in that their nonverbal abilities are poorer. The EP's lower performance score also accounts for the two English groups' lower full-scale score. It may be that there is a natural selection factor influencing which children leave and which ones stay in French immersion. If a child's language or nonverbal abilities are immature, he may be placed by parents and educators in a French immersion program, but if he has language problems

Table 1 / Mean Test Scores for Kindergarten – Grade 1

Skill /Test	Kindergarten				Grade 1			
	FP	EP	FC	EC	FP	EP	FC	EC
<i>Intellectual Functioning</i>								
WPPSI Verbal	93	91	112	111	Not given Not given	8.26	8.76	10.91
WPPSI Performance	109	96	117	114				
WPPSI Full	101	93	116	114				
<i>Vocabulary</i>								
WISC/WPPSI Vocabulary (standard scores)	9.00	8.43	12.04	11.89	8.26	8.76	10.91	11.30
PPVT	97.83	94.95	112.41	108.91	94.23	87.43	109.33	107.22
ITPA Auditory Reception (raw scores)	18.13	16.86	24.41	24.52	25.00	23.29	32.37	29.22
<i>Abstract Reasoning Skills</i>								
WISC/WPPSI Similarities (standard scores)	9.52	9.57	12.78	13.09	10.96	9.48	13.85	13.04
ITPA Auditory Association (raw scores)	15.13	14.67	24.52	23.96	21.39	21.15	28.15	27.87
<i>Grammatical Skills</i>								
NSST Reception	26.30	25.14	31.81	31.43	30.00	30.48	34.22	32.78
NSST Production	24.48	20.48	30.85	31.48	29.00	28.90	34.30	36.09
ITPA Grammatic Closure (raw scores)	12.74	10.71	20.30	23.00	16.39	16.52	23.63	24.96
Sentence Imitation (errors)	14.33	14.92	6.00	4.86	9.92	10.25	3.91	2.86
<i>Visual Skills</i>								
ITPA Visual sequential memory (raw scores)	17.96	14.52	18.74	19.65	20.70	19.57	21.52	19.52
ITPA Visual Reception (raw scores)	15.78	15.95	19.79	20.30	21.65	22.24	25.11	23.35
ITPA Visual Association (raw scores)	17.74	17.52	21.07	20.65	21.43	21.00	27.63	24.43
<i>Auditory Skills</i>								
ITPA Auditory Sequential Memory (raw scores)	15.04	14.00	24.22	27.48	18.87	19.48	28.22	27.91
ITPA Auditory Closure (raw scores)	Not given				13.04	14.32	18.63	17.57
ITPA Sound Blending (raw scores)	Not given				11.30	17.50	19.37	24.39
<i>Math</i>								
Metropolitan (raw scores)	Not given				40.95	40.37	46.05	51.35
Metropolitan (grade level)	Not given				1.7	1.6	1.8	2.2

Note: Language of instruction is indicated by F (French) and E (English). Group with language-learning disability is indicated by P and control group by C.

Table 2 / Summary of K-1 Results: Significant Effects

Skill	Test	Higher-Achieving Group			Interactions
		Language ability ^a	Language instruction ^b	Grade level ^c	
Intellectual functioning	WPPSI Verbal	Control			
	WPPSI Performance	Control	French		EP lower than FP
	WPPSI Full Scale	Control	French		
Vocabulary	WISC/WPPSI Vocabulary	Control			
	PPVT	Control		K	
	Auditory reception	Control		1	
Abstract reasoning	Similarities	Control			
	Auditory association	Control		1	Problems increase more
	NSST Reception	Control		1	Problems increase more
Grammatical abilities	NSST Production	Control		1	Problems increase more English increase more FP higher than EP, FC same as EC
	Grammatical closure	Control		1	
	Sentence repetition	Control		1	Problems increase more
Visual skills	Visual sequential memory	Control		1	Problems increase more EC only group not to increase
	Visual reception	Control		1	
	Visual association	Control		1	
Auditory skills	Auditory sequential memory	Control		1	Problems increase more EC only group not to increase
	Auditory closure	Control			
	Sound blending	Control	English		
Math	Metropolitan	Control			

Note : See note to table 1.

^aProblem /Control

^bEnglish /French

^cKindergarten /Grade 1

and other problems he might be placed in an English class. While this must be continually kept in mind when interpreting the results, it should be noted that, on most of the other measures to be reported, the EP group does not perform lower than the FP group at kindergarten. Thus the pattern of results just discussed may be unique to these tests.

3. The averages indicate that despite their language-learning difficulties, the children in the two problem groups have normal intelligence.

Vocabulary Skills

On all the vocabulary tests the control children performed better than the problem children; however the FP children, relative to their EP age-mates, were not suffering in terms of English vocabulary development as a result of their participation in a French immersion program.

Abstract Reasoning Skills

On both measures of abstract reasoning skills the control groups performed better than the problem groups. On the auditory association test, grade 1 scores were significantly higher than kindergarten scores. There was also a significant language-ability $\times$ time-of-testing interaction on the auditory association test indicating that the FP and EP groups improved more from kindergarten to grade 1 than the French and English control groups.

These results indicate that the abstract reasoning skills of the FP group were not impaired by participation in a French immersion program.

Grammatical Abilities

On all tests of grammatical ability the control children performed significantly better than the problem children, and for all groups the grade 1 scores were better than the kindergarten scores. On all tests except grammatic closure there was a language-ability $\times$ time-of-testing interaction which showed that the problem groups' performances improved to a greater degree than those of the control groups. On the NSST production test there were two additional significant interactions: language ability $\times$ language of instruction; and language of instruction $\times$ time of testing. When teased apart, these effects seem to indicate that on the NSST production test, the EP group is the group that improved the most over the course of a year and that the FC group improved the least.

Overall the results of the grammatical tests are encouraging. In all cases we see that the FP group improved its language skills at a rate commensurate with at least one of its control groups (EP or FC).

Visual Skills

On all tests of visual skills the controls performed better than the problems, and all groups performed better in grade 1 than in kindergarten. On the visual sequential memory test the fact that the two problem groups

improved from K to 1 while the control groups did not (a significant language-ability $\times$ time-of-testing interaction) can be accounted for by the lack of progress of the EC group (a significant language-ability $\times$ language-of-instruction $\times$ time-of-testing interaction).

These results once again show that there are no detrimental effects associated with having a language-learning disability *and* being in a French immersion class.

Auditory Skills

On the auditory sequential memory test the controls performed better than the problems, and scores were higher in grade 1 than in kindergarten. The fact that the two problem groups improved more than the controls (language-ability $\times$ time-of-testing interaction) can be accounted for by the lack of progress on the part of the EC group (language-ability $\times$ language-of-instruction $\times$ time-of-testing interaction).

On the auditory closure and sound blending tests, the controls performed better than the problems. On the sound blending test the English groups performed better than the French groups. This effect is almost certainly related to the fact that the EC and EP children were learning to read in English and were doing exercises in class which were similar to the items found on this test. The FP and FC children, however, had not yet been introduced to English reading and did not perform as well.

In summary, while the French groups performed more poorly than the English groups on the sound blending test, on the other tests of auditory skills the FP children performed similarly to the EP children.

Math Skills

The results of the analysis of variance run on the raw scores of the Metropolitan Achievement Test indicate that the control children performed better in math skills than the problem children. When teachers were asked about children's math skills at the end of grade 1, 25% of the FP group, 35% of the EP group, 22% of the EC group, and 0% of the FC group were reported as having difficulty. Thus on the basis of a standardized test and teachers' reports, the FP group seem to be progressing in math at the expected rate even though it is taught in French.

Summary of K-1 Results

Summary table 2 shows no evidence to support the contention that children with language problems will do poorly in a French immersion program. Such children improved at the same rate as their controls on tests of English vocabulary, abstract reasoning skills, grammatical skills, visual skills, auditory skills, and math skills.

Contrary to the WPPSI test results, none of the results of these tests suggests that the EP group was initially more disabled than the FP group.

Progress from Kindergarten to Grade 1 to Grade 2

This section presents the test results for children tested in kindergarten, grade 1, and grade 2. The kindergarten and grade 1 scores of children who had not yet reached grade 2 or who had dropped out of the project after grade 1 were not included in these analyses. The numbers of children tested in each group were: FP = 15; EP = 20; FC = 25; EC = 22.

Mean scores for the dependent variables are presented in table 3. The summary of the statistical analyses performed on these measures is presented in table 4.

While a detailed discussion of these results must await the testing of a larger sample of children, several comments can be made. On the English reading and spelling tests, the English groups performed better than the French groups. This is to be expected and replicates results of many immersion studies (Swain & Bruck, 1976). The French groups had only recently been introduced to English reading and writing, and needed additional time before performing similarly to their English-instructed peers. Notice, however, that the FP children were reading almost at grade level, while their spelling was further behind. According to the teachers' reports, equal numbers of FP and EP children were felt to be having particular difficulty in English reading.

On math tests, the children also performed well despite the fact that they were receiving math instruction in a second language. Teachers reported that 53% of the EP children and 40% of the FP children were having difficulty in math. Again these reports confirm the results of the standardized tests. Thus, by the end of grade 2 the FP children appear to be acquiring basic skills in English at an expected rate. We do not see in this report, as in the last, evidence that these children are having a particularly difficult time during the grade 2 year.

The results of these analyses strongly suggest that children with language-learning disabilities who attend French immersion programs from kindergarten until grade 2 progress and learn at the same rate (and sometimes even faster) than children with language problems who are instructed in their native language. On no test do the FP children lag behind.

Progress from Kindergarten to Grade 1 to Grade 2 to Grade 3

This section reports the test results of children tested in kindergarten, grade 1, grade 2, and grade 3. The numbers of subjects tested in each group were: FP = 9; EP = 14; FC = 13; EC = 16. Mean scores for the measures are presented in table 5. Statistical summaries of the analyses of variance are presented in table 6.

Intellectual Functioning

Results of the analyses of variance comparing kindergarten WPPSI scores

WRAT Math					
— raw score	25.75	24.75	25.52	25.82	
— grade level	2.8	2.6	2.8	2.8	
Spache Reading					
— grade level	2.53	3.00	3.54	4.57	
WRAT Reading					
— raw score	39.47	46.65	48.36	56.90	
— grade level	2.1	2.6	2.7	3.9	
WRAT Spelling					
— raw score	25.87	31.45	29.52	34.82	
— grade level	1.8	2.6	2.5	3.2	

Note: See note to table 1.
 2×2 ANOVAs were run on raw scores of all achievement tests except for the Spache, where grade level was used.

Table 4 / Statistical Summary of K-1-2 Analyses

Skill	Higher-Achieving Group				Interactions
	Test	Language ability ^a	Language instruction ^b	Grade level ^c	
Vocabulary	WISC subtest PPVT	Control	French	K, 2 higher than 1	English higher than French at 2
		Control		K < 1 < 2	
Abstract reasoning	Auditory reception	Control			Problems increase more from K to 2 than controls
	Similarities	Control	French		
Grammatical skills	Auditory association	Control		K < 1 < 2	Problems more similar to controls at 2, than at K
	NSST reception	Control		K < 1 < 2	
	NSST production	Control		K < 1 < 2	Difference between English K and French K disappears at 1 and 2
Visual skills	Grammatic closure	Control		K < 1 < 2	Discrepancy between problems and controls less at 1 and 2 than at K
	Visual sequential memory	Control	French	K < 1 < 2	
Auditory skills	Visual reception	Control		K < 1 < 2	Problems increase more than controls
	Visual association	Control		K < 1 < 2	
	Auditory sequential memory	Control		K < 1 < 2	By grade 2, problems similar to controls
	Auditory closure	Control		1 < 2	
Achievement skills	Sound blending	Control	English	1 < 2	FP group increase the most from 1 to 2
	METROP. math	Control	French		
	WRAT math	Control			Problems increase more than controls
	Spache	Control	English		
	WRAT reading	Control	English	These tests only given in grade 2	
	WRAT spelling	Control	English		

Note: See note to table 1. ^aProblem/Control ^bEnglish/French ^cKindergarten/Grade 1/Grade 2

with grade 3 WISC scores indicated that on all three scales, the control children performed significantly better than the problem group, and that the grade 3 scores were higher than the kindergarten scores. On the Performance Scale, there was a significant language-of-instruction effect: the French groups had higher scores than the English groups. However, a significant language-ability $\times$ language-of-instruction interaction on the Performance Scale indicates that this difference is attributable to the higher FP vs. EP scores.

The results of the IQ tests suggest the following:

1. Children with language problems in French Immersion classes do not suffer impairment to verbal and nonverbal aspects of cognitive functioning due to this mode of education.
2. These results again remind us of the possibility that while the EP and FP groups may be well matched on Verbal and Full Scale IQs, the EP group is more disabled in terms of nonverbal aspects of cognitive functioning.

Other Skills Tested in English

By grade 3 the FP children performed as well or better than the EP children on all tests given. Their participation in French immersion programs does not appear to have been detrimental to their cognitive or linguistic development. They increased their performance on such tests at the expected rates. Furthermore, they learned to read and spell in English: their grade 3 reading scores showed them to be reading as well as their EP controls (note that the lower scores associated with the French groups in grade 2 were not found at grade 3, by which time the children had received sufficient English language arts instruction to read and spell like "typical" grade 3 students). On two of the three math tests, the FP children performed similarly to the FC children, and the EP group also performed similarly to the EC group. On the third test, which required reading of a series of problems, the control children performed better; nevertheless the FP children were at the same level as the EP children. The teachers' evaluations of these children's reading, writing, math, and English skills were consistent with the above findings. Overall, teachers perceived the control children as having fewer problems than the problem children, and the FP and EP children as being on the same level on a variety of skills.

The above results are extremely encouraging, for they suggest that children with language-learning problems who attend French immersion programs can develop linguistic, cognitive, and academic skills at a rate similar to that at which they would develop were they placed in an all-English classroom. The additional benefits that come from learning a second language will be discussed in the following section.

Table 5 / Mean Test Scores for K-1-2-3 Measures

Skill/Test	Kindergarten			Grade 1			Grade 2			Grade 3		
	FP	EP	FC	EC	FP	EP	FC	EC	FP	EP	FC	EC
<i>Intellect. Functioning</i>												
Verbal IQ	98.44	91.43	111.47	109.19					103.33	99.64	112.15	114.81
Performance IQ	110.56	96.14	113.38	112.56					117.22	108.71	119.85	120.54
Full IQ	104.67	93.07	113.85	112.00					110.78	104.36	117.46	119.19
<i>Vocabulary</i>												
WISC	9.22	8.71	12.15	10.69	8.56	9.07	11.54	10.87	8.56	8.86	11.54	11.50
PPVT	108.89	98.64	113.77	107.13	99.00	86.71	108.08	106.06	100.67	96.00	115.39	110.81
Auditory reception	20.33	17.57	23.38	22.56	29.11	23.36	31.77	29.44	30.78	29.86	35.00	35.44
<i>Abstract Reasoning</i>												
Similarities	10.00	9.64	12.69	12.94	11.56	9.93	13.46	12.44	11.22	9.86	13.85	12.69
Auditory association	16.44	15.43	25.00	21.44	22.56	21.71	28.00	28.13	25.33	25.71	31.23	31.69
<i>Grammatical</i>												
Grammatic closure	14.89	10.86	20.69	20.19	17.33	16.43	24.15	24.38	23.22	22.29	27.54	28.50
Sentence imitation									26.00	24.07	29.00	30.25
									5.00	5.00	.77	.83
<i>Visual</i>												
Visual seq. mem.	17.22	15.14	17.77	17.00	22.22	19.14	23.15	19.63	25.00	19.86	22.23	23.19
Visual reception	17.33	17.50	19.38	18.63	24.56	22.21	26.23	22.63	27.33	24.79	27.92	28.69
Visual association	17.56	18.86	21.69	19.38	23.00	21.07	29.15	24.75	27.00	26.00	26.31	28.19
									19.38	24.75	28.19	31.38
<i>Auditory</i>												
Auditory seq. mem.	13.44	15.43	25.08	26.63	18.11	20.57	30.31	28.75	21.78	23.71	33.00	32.06
Auditory closure		Not given			14.22	13.71	18.46	17.13	19.00	17.50	21.85	21.25
Sound blending		Not given			8.89	14.43	16.00	24.00	20.56	27.43	25.38	28.88
									25.11	24.93	35.77	36.75
									20.11	20.07	22.77	22.94
									20.56	23.79	28.62	29.44

Table 6 / Statistical Summary of K-1-2-3 Analysis

Ability	Test	Higher Achieving Group			Interactions
		Language ability ^a	Language instruction ^b	Grade level ^c	
Intellectual functioning	Full scale	Control		K < 3	
	Verbal Performance	Control		K < 3	
Vocabulary	WISC	Control		K = 1 = 2 < 3	FP vs. EP discrepancy greater than FC vs. EC discrepancy
	PPVT	Control	French	K = 2 > 1 = 3 ^d	Problems decrease from K to 3, controls remain the same
Abstract reasoning	Auditory reception	Control		K < 1 < 2 < 3	
	Similarities	Control		K = 1 = 2 < 3	
Grammatical	Auditory association	Control		K < 1 < 2 < 3	
	Grammatical closure	Control		K < 1 < 2 = 3	Problems increase more
Visual	Visual sequential		French	K < 1 < 2 < 3	
	Visual reception			K < 1 < 2 < 3	
Auditory	Visual association	Control		K < 1 < 2 < 3	
	Auditory sequential mem.	Control		K < 1 < 2 < 3	By grade 3, EP lowest and FP same as FC, EC
	Auditory closure	Control		K < 1 < 2 < 3	
	Sound blending	Control	English	1 < 2 = 3	Between grades 2 and 3, the problems decrease and controls increase. Between grades 2 and 3, French increase, English do not
Achievement	METROP. Math comput.			Analysis for grade 3 level only	
	METROP. Math prob.	Control	French	2 < 3	Bigger increase for controls than for problems
	WRAT Math				
	SPACHE reading	Control		2 < 3	French increase more than English
	WRAT reading	Control		2 < 3	Bigger increase for French group who start later
	WRAT spelling	Control		2 < 3	

Note: See note to table 1. ^aProblem/Control ^bEnglish/French ^cKindergarten/Grade 1/Grade 2/Grade 3
^dIt appears that this difference is due to the form of the test used: Form A was used in K and grade 2, Form B in grades 1 and 3.

French Language Skills

Below are presented the results of the OISE French listening comprehension test (table 7) and of the teacher interviews. Because the listening comprehension test was not systematically given to all the children until June 1976, the data represent the scores of only a subsample of the population. Similarly the teacher interview forms were not developed and administered until June of 1975; thus, teacher evaluation on all the children in the sample is not available. Because of the nature of these data, no statistical analyses were run.

Table 7 / OISE Listening Comprehension Test Scores

Group	Grade 1	Grade 2	Grade 3
FP	20.1 (N = 11)	32.3 (N = 9)	38.1 (N = 6)
FC	28.5 (N = 10)	36.06 (N = 17)	38 (N = 9)
EP	10.1 (N = 11)	8.2 (N = 15)	10.75 (N = 8)
EC	9.6 (N = 7)	10.7 (N = 15)	14.25 (N = 8)

Note: See note to table 1.

Table 7 shows that on a test of listening comprehension the FP children performed quite well. Between grades 1 and 2 there was a big improvement for this group, who according to the norms were scoring almost at an average level for grade 2 immersion pupils. By grade 3 they performed similarly to the FC children. It is interesting to compare these developmental trends with those of the two English groups, where there is little improvement from grade 1 to grade 3. The scores on this test certainly indicate that in terms of aural comprehension the FP children were acquiring proficiency in French.

Turning to teachers' reports of listening skills, we see that in grades 1 and 2 the teachers report that some of the FP children but none of the FC children have difficulty in understanding what is said; however by grade 3 all children are considered able to understand almost all of what goes on in the classroom. There is a similar pattern for productive or expressive skills. At grade 1 many children are considered by their teachers to be unable to express themselves in French. This ability continues to improve until grade 3, at which time all teachers report that most of the time the FP children express themselves in French in a comprehensible manner.

The results of the OISE test and the teacher interviews indicate that while it may take the FP group a little longer to learn the basics of a second language, by grade 3 they are becoming proficient in their second language. The fact that they have more difficulty expressing themselves than the

FC children reflects the basic nature of their difficulty — language learning. Nevertheless they are learning not one but two languages at an admirable rate.

In terms of French reading ability at grade 1, 39% of the FP group as compared with 20% of the FC group were reported as having difficulty with reading. At grade 2 these figures are much the same. By grade 3 the number drops somewhat; 2 of the 7 FP children rated were thought to be having problems and 3 of the 13 FC children were thought to be having problems. These figures are similar to those for the EP and EC children in English reading.

These results do not present a picture of instant success for the FP children; indeed, if they did it would be unexpected. The children studied do have problems. We did not expect French immersion to solve those problems. What the results do show is that the children are no worse off than they would have been in an English class, and that they are learning to read French as well as to speak and understand it.

One of the phenomena we have noticed in our clinical practice is that many language-disabled children cannot cope with a typical French-as-a-second-language program (typically given for 20–40 minutes a day several times a week); they leave school with almost no knowledge of French. This may be due to the fact that most of such programs are based on teaching methods (a great deal of memory work, repetition of language out of context, and the learning of abstract rules) which inadvertently exploit the weaknesses of the learning-disabled child. The French immersion program does not seem to have this effect; rather it provides a more suitable and natural environment for these children to learn French. In order to live in Quebec society such children are going to have to become proficient in French. The French immersion program appears to be contributing to the development of this ability.

DISCUSSION

Results of the present study indicate that children with language disabilities can benefit from and learn in French immersion programs. Children should not be excluded from participating in such programs merely because it is felt that their first-language development is poor. Results of our study show that language-disabled children can acquire some proficiency in the French language while continuing to develop skills in their own language. They also learn the basic concepts of reading, math, and spelling even though these subjects are taught in French. It takes such children longer than it takes their normal controls to do this, but they do succeed without any special adjustments or help (a point to which we will return).

While encouraged by the above results, we are not blind to methodological problems of the study. It is highly possible that the two problem

groups are not equated in terms of their severity of disability. The reason that the FP group may appear to fare so well is that they are initially better off than their EP peers. While this assumption may prove valid, one factor may counteract the trend — in English classes the children with problems are receiving more special help and more appropriate special help for their problems than the children in the French immersion classes. Thus the French immersion children with problems are progressing despite the fact that they are not getting the same extra support that they would get were they in the English stream.

To document this observation at the grade 1 level: 24% of the English-stream children received help in the form of either extra remedial reading or attendance at a full-time remedial class; 3% (2 out of 60) of the French immersion children received similar services.² The general strategy for helping French immersion children with problems at this level is to have them repeat grade 1 (2 subjects in the sample did this) or to switch them into the English stream. The two children who did receive help received it in recent years. It is hoped that the trend toward provision of help will continue.

At grade 2, 26% of the English-stream children were receiving special services, and 23% of the French-stream children were receiving special help. However, the English children were receiving more help in terms of time, and only 13% of the French immersion children were receiving help in French. This is an important point: if the children are in French immersion, they must receive remedial services in French, not in English. Fortunately the current practice appears to be changing, as it is the children just tested who are receiving the French remedial services.

The same trends exist at the grade 3 level: the same number of children in English and French streams are receiving remedial services, with the French immersion children being treated less intensively and less consistently in terms of their problems than the English-stream children.

The French immersion children are receiving help in English for their problems in French because the services are not available in French. If children are having difficulty in French they must be given help in French. Furthermore as was suggested in the last report (Bruck et al., 1975) it seems sensible, for those children who are a little slower in acquiring basic skills in French immersion programs, that English reading not be introduced until they have a firmer grasp of these skills in French. In this situation the time spent on English reading might better be devoted to remediation in French skills.

From our experience over the past seven years, these trends are *slowly* changing. More special programs and classes are being arranged for the child with problems; teachers are voluntarily rearranging schedules in order to free extra time to work with individual children. But these measures will not be effective until all educators involved with French

immersion programs are convinced that the child with problems has a place *in* rather than out of these classes. It is hoped that the results of the present study have clarified and will continue to clarify some of these issues.

NOTES

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1. For those tests given only at one grade level (e.g. in table 1: the WPPSI; 2 subtests of the ITPA; Metropolitan Math) 2×2 analyses of variance were run. The independent variables were language ability and language of instruction.
2. This information was obtained through the teacher interviews.

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1. M. Swain. *Bilingual education for the English Canadian*. Paper presented at Georgetown University Round Table on Languages and Linguistics, 1978.

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