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SECOND-LANGUAGE LEARNING  
IN AN  
ACTIVITY-CENTRED PROGRAMME

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A THESIS  
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## ABSTRACT

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### SECOND-LANGUAGE LEARNING IN AN ACTIVITY-CENTRED PROGRAMME

The purpose of this study is to investigate the effectiveness of an activity-centred learner approach to a French immersion programme at the grade VII level. Four groups totalling approximately 240 students from schools in the Montreal area were tested. Three groups followed different types of second-language learning programmes (teacher-centred immersion, activity-centred immersion, French-as-a-second-language) and the fourth group was a control group of native French speakers. Students were tested, using standardized and other tests, in both English and French language skills, and one group was given an attitude questionnaire. Three-way analyses of variance were performed on the results of the tests, using programme, IQ, and sex of student as independent variables.

The statistics in this report show that neither group of students in an immersion programme showed any loss in English-language development when compared to students who followed a regular grade VII English curriculum. The French language skills of students who were involved in an activity-centred immersion programme are comparable to those of students in a teacher-centred immersion programme whose class-length time was almost double.

Theories of language acquisition, linguistics and cognitive development serve to support the hypothesis that the conditions for learning in an activity-centred atmosphere appear to accelerate acquisition of a second-language.

## RESUME

Cette recherche fut conçue afin d'évaluer l'efficacité de la méthode active en classe d'immersion (français, langue seconde) au niveau de la septième année. Quatre groupes d'enfants, environ 240 élèves de la région montréalaise, ont subi les tests. Parmi ces groupes, trois d'entre eux suivaient des cours différents de français, langue seconde [programme d'immersion dirigé par l'enseignant (TCI); programme d'immersion, méthode active (ACI); et programme régulier en anglais avec cours en français comme langue seconde (FSL)] et le quatrième groupe, qui servait de contrôle, comprenait des élèves francophones (FC). Tous les élèves ont éprouvé des tests de langue en français et en anglais et un groupe a répondu à des questions sur leur attitude envers leur programme d'immersion en français. Les résultats furent analysés, en utilisant comme variables indépendantes: le programme, le quotient intellectuel, et le sexe de l'élève.

Les résultats montrent que les élèves dans les classes d'immersion ne sont pas arriérés dans le développement de leur langue maternelle, comparés aux élèves qui ont suivi le programme régulier en anglais. En français, les élèves du programme ACI ont réussi aussi bien que les élèves du programme TCI, malgré que les heures de classe en français de ces derniers soient à peu près le double du groupe ACI.

Des théories de l'acquisition de la langue, de la linguistique et du développement cognitif chez l'enfant ont soutenu l'hypothèse que la méthode active sert à accélérer l'apprentissage d'une langue seconde.



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## CHAPTER I

### INTRODUCTION

#### AND

### SURVEY OF THE LITERATURE

Second-language learning is assuming increasing importance for anglophones of this province, who foresee that their children will be at an economic and political disadvantage unless they speak French fluently. The results of many years' experience in schools in the English systems indicate that after as many as eleven years of French taught as a subject in the curriculum, the great majority of students are unable to communicate effectively in the second language. This has led to the establishment of so-called "immersion" classes, in which French is used as the vehicle of instruction and the means of communication, instead of the object of study.

Activity-centred classrooms are those in which the students are involved by choice in learning and pursue individual interests to a greater or lesser extent as determined by the theme being studied. Rather than teacher-directed, the activity-centred classroom is student-oriented.

This study examines the combination of these two approaches, i.e., the activity-centred approach in a French immersion programme.

While it is accepted that children in particular, but also adult immigrants, learn a second language without tutoring when they are placed in an environment where the second-language is used as a means of communication, the theoretical basis for this learning is not known. It now appears that creating such a situation artificially in the classroom brings about similar results. My aim is to suggest a theoretical basis for this learning, referring to theories of Noam Chomsky, B.V. Belyayev and Jean Piaget.

The hypothesis examined is that the learning of a second-language, in this case French, in an immersion situation organized along an activity-centred programme is a more efficient method of developing linguistic competence within the school context than in a teacher-centred immersion programme.

This study evaluated the results of one year's classroom experience in two different French immersion programmes.

A. SECOND-LANGUAGE TEACHING: METHODOLOGIES AND THEORETICAL BASES

A brief review of some current methodologies of second-language teaching<sup>1</sup> is preliminary to understanding the nature of an immersion programme.

B. Audiolingual method (AL)

The AL method came into being in the United States during the 1940's, gradually supplanting the traditional grammar-translation method then generally in use. Among proponents of the method were Nelson Brooks, Robert Lado and R.L. Politzer (Jakobovits, 1970). The AL or "New Key" approach, as it was called, emphasized oral skills and concentrated on habit formation through the learning of structures by imitation, repetition, and various pattern drills employing substitution and transformation. It brought about the development of the language laboratory as a practice aid. The foreign language was used at all times during the lesson. No explanations were given in the native language.

This approach viewed acquisition of a second-

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<sup>1</sup>The terms "second-language" and "foreign language" are distinguished by their situational context. For example, French is considered a second-language (L<sub>2</sub>) in Quebec whereas it is a foreign language (FL) in the U.S.S.R.

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language as a habit-skill, and its methodology naturally emphasized the formation of habits which would become automatic responses to the appropriate language stimulus. This idea was apparently based on early Thorndikean association theory (Carroll in Jakobovits, 1970) and later on the work of B.F. Skinner (1957). Skinner had had considerable success in developing desired behaviour in experiments using stimulus-response techniques with animals. Similarly, he considered language-learning as the development of simple habits. By focussing attention on observable speech behaviour, he sought to manipulate, develop and modify response patterns by using reinforcement techniques (Lambert, 1972). Skinner did not take meaning into account in his theory of language.

In a celebrated book review, Noam Chomsky (1959) attacked not only Skinner's thesis on language acquisition but the whole behaviouristic position on the psychology of language. He contended that this account of language acquisition was either devoid of content, if interpreted metaphorically, or wrong, if interpreted literally, since it failed to explain how language is used or acquired. Skinner's theory was an extension of his work on animals and was not valid when applied to humans. As an example, the concept of "response strength" (a basic measure of learning for the animal) expressed the number of pecks a

pigeon used to retrieve pellets of food. When applied to language, was this to be considered as emission of words, rate of speech units, or intensity of vocal response? Chomsky also questioned the concept of "control", which is the end-result of the learning process. When applied to language behaviour, he said the ideas of stimulus, response and reward lose their scientific explanatory value. It is difficult to determine the "stimulus" of an utterance; in what sense an utterance is a "response"; and how the "reward" exerts "control". And yet these were the foundations upon which the habit-skill method of language teaching was said to be based.

Rivers (1964) discussed four major points of disagreement between premises of audiolingualism and current psychological thinking. She did not accept that language was a process of habit formation, that speech should always precede writing, that learning should be through analogy and not analysis, and that meaning should be taught only in a cultural context, (i.e., without the use of English).

Carroll (1966) contended that the audiolingual habit theory had been in step with psychological thinking 15 years earlier, but was no longer valid in view of recent developmental theories.



Jakobovits (1970) considers audiolingualism to be a one-factor theory of learning: repetitive pattern practice results in the acquisition of a grammatical structure by induction, followed by generalization to other patterns. He submits that this theory has not proven successful, given the dissatisfaction of students and teachers because of boredom with pattern drills and the disappointing level of proficiency attained in the second language.

## 2. Audio-visual method (AV)

In 1951, the French government created the Centre de Recherche et d'Etude pour la Diffusion du Français (CREDIF) upon a request from the United Nations to western countries to carry out research into the nature of their respective languages and the best means of teaching them. There was a particular need at that time to assist developing countries by enabling their nationals to obtain educational and technical training in industrialized countries, and for these countries to receive the benefit of technological advances from the United States.

A team of linguists, psychologists and pedagogues at CREDIF developed an audio-visual method of second-language learning, which has since been adapted to other Romance languages, to the Slavic language, and to Hebrew

and Korean.

The first result of their efforts was "Le Français Fondamental" (Institut Pédagogique National, 1959), a vocabulary based on the most frequently used and most useful words in French, and the essential aspects of grammar of the spoken language. This basic French was arrived at by recording 163 conversations of every-day situations. From the total of 312,000 words recorded, there were approximately 8,000 different ones repeated. These were classified as to frequency (1/10,000). Some useful words (autobus, timbre, épicier) lost by this method of classification were returned by adding a second criterion, that of interest centres. The number of words necessary to basic communication in French was thereby determined to be 1,445 items.

A methodology to teach le Français Fondamental was created, based on the premise that language is an instrument of communication and that it should be used as such from the very first lesson. The European school of linguistics (Hjelmslev, Martinet, de Saussure) takes into account the semantic function of language and this was incorporated in the audio-visual methodology.

From a linguistic point of view, the signified (le signifié) which depicts the situation, is linked to

the picture, and the signifier (le signifiant) becomes language, and is linked to sound. Schematically, this is shown in Figure 1.

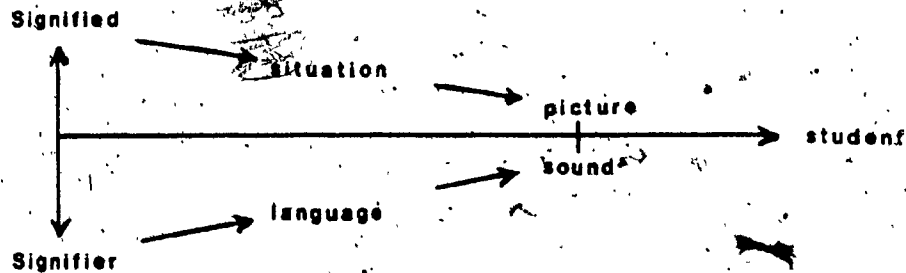


FIGURE 1. Acquisition of Language through the AV method.

It is in this way that concepts and situations (the signified) may be associated with speech (the signifier) in the new language without the use of the mother tongue. Interaction occurs between signified and signifier and both aspects must be taken into account in language teaching.

Because of advances in technology, it was possible to use pictures and sound to represent situations in a new way. The film-strip projector was used to project pictures of situations as they developed, while the tape-recorder provided the voices of the characters in dialogue.

The use of the tape-recorder was important in giving

correct pronunciation, intonation and rhythm, as well as lending realism to the situation through the use of different voices for each character involved.

In this method, the student is therefore placed vicariously in a situation which he understands to some extent through pictures and in which he is led to participate through speech, without recourse to his native language. This is accomplished through a "hierarchy of interrogation" (Smith, 1970, p. 51) a process which native speakers employ to clarify a statement which they have not understood. Smith (1970, p. 49) gives an example:

The dingbat was fizzled by the glompus  
in the gloaming.

The native speaker will immediately clear up anything he has not understood: "Who got fizzled?" ... When? ... What happened to the dingbat? ... Who fizzled the dingbat?"

The device of interrogation is used as a primary strategy for learning a second-language in the AV method and can lead to remarkable manipulation of the new language because of its creative power, involving the student in generating speech rather than repeating formal structures.

The technique of exploitation, i.e., the creation of new situations which use basic language structures from

the AV lesson, also serves the function of generating new speech which is meaningful to the students.

### 3. Bilingual Method

The label bilingual method is applied to several different methodologies of teaching a foreign language. The following have been selected as representative:

- a) C.J. Dodson - use of mother tongue
- b) G. Lozanov - use of mother tongue, yoga and Soviet psychological basis
- c) W.F. Mackey - two linguistic groups in the same school, each learning the other's language
- d) B. Spolsky - education of Spanish-American children in the United States

#### a) C.J. Dodson

Dodson (1967, 1972) considers the bilingual method a way of teaching a foreign language (FL), using the mother tongue to facilitate meaning. He has built an elaborate methodology on the basis of stimulus-response theory and his own research. Dodson gives very little detail of the sample he used for different tests, the testing procedures and the exact results of each test. It is therefore difficult to ascertain the value of his

theories. One of his tests performed on students ranging in age from eight years to more than 21 years measured contact frequency, i.e., the number of responses made before a student can say an FL sentence of five to six words fluently and accurately. Results showed that a younger child requires more FL contacts than either an adolescent or an adult, and that a child of lower IQ requires more frequent contacts to consolidate the material to be learned than the child of higher IQ.

Dodson's method is apparently in use in elementary and high schools in Wales to teach Welsh as a second-language. The minimum equipment required by the pupils is a printed text of the situation to be learned, and illustrations, preferably of each sequence of action in the lesson, as in the AV method. The student is given a brief explanation in his native language of each new element to be learned in the FL, and then time is spent on various language-learning exercises which are graded in difficulty. An interpretation exercise is included which is intended to develop links between mother tongue, concept, and foreign language. The aim of Dodson's methodology is to enable the student to pass the examinations required at the end of his secondary school years and permit him to use the language in a foreign environment.

b). G. Lozanov

Another method which can be categorized as Bilingual is the Suggestopedia method developed in Bulgaria some ten years ago by Dr. Georgi Lozanov. It is being used experimentally in Moscow, East Berlin, Leipzig, and Budapest, (Bancroft, 1975) as well as in Ottawa (Dampier, 1975) by the Public Service Commission of Canada.

The Lozanov method, which has also been applied to the teaching of such subjects as history, literature and mathematics, is founded on principles of Yoga and Soviet psychology. In language teaching, the mother tongue is used to convey meaning of new material in the foreign language. Much of Lozanov's theoretical work is complex and has not been fully translated, according to Dr. Bancroft (1975). She states that his theoretical principles are: "authority, infantilization, double-planeness, intonation, rhythm, concert pseudo-passiveness" (1972, p. 18).

Authority: The authority of the teacher (in the sense of having knowledge) and the prestige of the institution are described as necessary to evoke a greater expectancy on the part of the student, which will in turn lead him to make a greater effort to achieve his goal. Fraternization between student and teacher is discouraged; but negative words or gestures are not permitted in the classroom.

Infantilization: It is suggested to the students that they have a child's ability to memorize and a child's curiosity for new information.

Double-planeness: This refers to the unconscious stimuli that come from the environment and the teacher's personality. The classes are limited to twelve students; the classroom décor is attractive, with pleasant colours used and comfortable arm-chairs provided.

Intonation: Use of varying intonations is made to aid memorization.

Rhythm: The rhythm of the language class is varied, ranging from animated conversation to relaxed listening. The teacher is trained in the use of rhythm for spacing the material read to the students: mother-tongue explanations, foreign language sentences.

Concert pseudo-passiveness: This refers to the relaxed attitude of the student during the part of the lesson when the language material is read (or acted out) over a musical background.

This approach is the result of a search by Dr. Lozanov for teaching methods which will permit acquisition of obligatory learning (e.g., foreign languages) and remain a creative, healthful process, contributing to



the student's physical and mental well-being.

c) W.F. Mackey

William F. Mackey (1972), Director of the International Centre for Research on Bilingualism at Laval University, limits his description of bilingual teaching methods to those of one school in Berlin, where German and American students followed a curriculum in which alternation of languages was practised. In essence, both groups learned each other's language while pursuing their studies in both languages.

In his introduction to Mackey's book, Joshua Fishman comments that the results described should not be considered applicable to any but situations similar to those which existed at the Berlin school. It is interesting to note that similar conditions--two different language groups who wish to know each other's language, available school facilities and trained teachers--do exist in the province of Quebec, but that this approach to learning a second-language has not been attempted, to my knowledge.

The John F. Kennedy school in Berlin included grades from Kindergarten to grade 12 and numbered approximately one thousand German and English-speaking students. Teachers used a wide range of procedures in the classroom. Few of them lectured; most used a flow of bilingual

questions to make students discover things for themselves. Most classes were activity-oriented, emphasizing physical aspects at the primary level, and progressing through visual to intellectual (verbal) ones in the higher grades. The students were encouraged to help each other and the teacher so that all might benefit from the bilingual learning situation. Audio-visual material was considered an essential learning aid.

In scholastic achievement tests, American students scored above the American average (except for a slight backwardness in mathematics at the final level) on the Iowa Achievement Test. In global foreign language achievement, there was no measure against which the students could be accurately compared. Mackey states that the dominant language of the student body as a whole was German. In a test on level of comprehension, 68.5% of students understood everything they heard in German and 40.6% understood everything they heard in English. This increased to 85.3% and 77.8% respectively, when the category was broadened to include "Mostly Everything". It was felt by the staff and researchers that students widened their horizons and mind, and improved their ability to handle interpersonal relations as a result of being in the school.

A bilingual school of this kind cannot be said to

use a particular methodology, since learning is achieved through the most appropriate technique for the age level and the subject matter involved. However, it can be said that these techniques appear to be based on psychological theories of cognitive development, rather than on S-R theories. The very nature of the approach (education through the use of two languages) implies adherence to the principle that second-language acquisition is similar to first-language acquisition.

d) B. Spolsky

In the United States, the presence of many immigrant children in the public school system has created considerable interest with regard to their language of education (Spolsky, 1972). The poor achievement in school of the majority of these children indicates that present pedagogical methods are ineffective. It is also claimed that these children are culturally alienated, both from their own heritage (by their education and language) and the American way of life (by their home environment).

In her review of research projects, Engle (1975) found no conclusive evidence of the effectiveness of education in a non-native language as against bilingual education (education in the native language along with a non-native language). She did state that education in a

bilingual programme did not seem to harm the children or retard their development in the native language.

In Canada, the attitude on the question of language of instruction is quite different from that shown in the U.S. Programmes in which instruction is given in the second-language (French) may be found in all ten provinces. They are available for different age levels from Kindergarten to grades 7 and 8, although not all types are available in all geographical areas. From test results to date, there appears to be little reason for concern as to damaging psycho-social or pedagogical effects to children from being exposed to education through the medium of a second language.

#### 4. Immersion Method

Although the St. Lambert school experiment, which began in 1965, is the best known example of the immersion method for second-language learning in Canada, the Toronto French School (TFS) appears to have been first to implement this technique, beginning in the 1962 school year. Both programmes were developed at the instigation of parents, the one in St. Lambert within the local public school system, and the Toronto one as a private venture.

Both groups aimed at balanced bilingualism for their children, i.e., native-like proficiency in both languages.

The TFS curriculum (Giles in Swain, 1972) includes modern maths, the Nuffield science programme, and second-language study, using the AV method, Voix et Images de France. It is based on notions of cognitive theory.

Students have been tested for achievement in mathematics, science and reading skills. They have also been tested for changes in intelligence, effects of perceptual problems on transfer of skills, and the effectiveness of different methods of reading. Comparisons have been made between results of students in the TFS and those in monolingual schools in Canada, the United States and the United Kingdom. Experiments on duration of immersion (half-day or full days for varying lengths of time) have been conducted.

The St. Lambert experiment, on the other hand, has been closely followed since its inception by a team of researchers from McGill University. Tests began with the Pilot Group in Grade I (1966) and have continued through Secondary V. The results of testing from Grade I to Grade IV have been published (Lambert & Tucker, 1972) in book form.

The curriculum of the Pilot Group varied according to level in school. The Kindergarten class lasted two hours per day and was conducted entirely in French. The

children were introduced to French in a natural way through music, play and the plastic arts. The goal was to develop listening comprehension, vocabulary and spontaneous verbal expression so that the children would be able to follow a regular Grade I curriculum in French.

In Grade I, the course of study was similar to the curriculum of the French Canadian school systems for that level. Additional material from the curriculum of Grade I metropolitan French schools was incorporated. All of the materials used had been designed for use by native-French speakers.

This pattern was followed for each of the subsequent grades. The classes were very much teacher-oriented, quiet and traditional in the European sense, and the children seemed relaxed and happy with the programme and the high standards expected of them.

The sample consisted of the Pilot Group, (PG), a French control (FC) group and two English Control groups (EC). All groups, except EC II, came from St. Lambert; EC II came from a residential neighbourhood of Montreal.

Testing included interviews with parents and a questionnaire on their ethno-linguistic attitudes. The children were assessed on the Raven Progressive Matrices test of general intelligence, and were also tested for

achievement in English (reading, vocabulary, speaking), math (concepts and computation), and French (speaking, vocabulary, reading). Tests were also conducted on word association in both English and French, and phoneme discrimination in Russian.

After a five-year period in the immersion programme, the students showed no signs of retardation or negative transfer in native-language skills. Their English reading ability, listening comprehension and knowledge of concepts, as well as their skills of expression, were at the same level as those of the English controls. Their second-language skills in vocabulary were at the same level as the French-control group, and they were generally comparable in listening comprehension skills. Their ability to express themselves was below that of the French control group on measures of rhythm, intonation and overall expression. Their oral expression skills were noticeably better when they were asked to invent stories of their own rather than retelling someone else's. It is the author's belief that this is a significant finding and will be discussed further in the section on the current research. In the word association tests in both languages, the children's responses were as appropriate, rapid and mature as those of both English and French control groups. On the test of discrimination of Russian phonemes, there was no evidence

that bilingual children showed greater sensitivity to foreign language sounds. The results in mathematics indicated that the Pilot Group scored at the same high level as the control groups. Lambert and Tucker considered these results indicative of a transfer of skills from one language to another because the PG had received all instruction in French.

The theoretical bases for the programme seem to derive from Dr. Wilder Penfield's views first expressed in 1953 in a speech given to the American Academy of Arts and Sciences in Boston, and later added as an epilogue to his book Speech and Brain Mechanisms: (Penfield and Roberts, 1959)

Language when it is learned by the normal psychological process is not taught at all. It is learned as a by-product of other pursuits. . . . Language is not a subject to be studied --it is a means to an end, a vehicle and a way of life. (p. 257)

Penfield contends that there is a biological clock in the brain, that the complex speech-mechanisms of the dominant hemisphere of the cerebral cortex develop before puberty, and that after this time the "plasticity" of the brain for language acquisition is lost. Lenneberg (1967) also contends this. Penfield bases his views on studies of brain damage incurred at different stages of life: an aphasic child who has lost the use of one hemisphere can



relearn language; an adult cannot. The more recent theories of Lenneberg (1967) support Penfield's contentions.

Suggestions in the UNESCO report on the teaching of foreign languages (Stern, 1963) were also important in providing the psychological theory and educational models which led to the St. Lambert project. Olga Melikoff (Lambert and Tucker, 1972, Appendix A) one of the group of parents promoting the scheme, says that "this document became the group's bible" (p. 223).

In discussing the results of the tests of English reading and of math skills, Lambert and Tucker refer to the theories of L.S. Vygotsky with regard to transfer of skills and the acquisition of a second-language. Vygotsky (Lambert and Tucker, 1972) found that so-called "scientific concepts" (i.e., those which had been brought to a state of awareness in the child by a teacher) were mastered and understood earlier than "spontaneous concepts" (those with which the child was familiar and which were not "thought out" by him). He argued that children are therefore able to transfer concepts which have been developed through instruction because they are conscious knowledge. Vygotsky also believed that learning a second-language was a conscious and deliberate act, since higher forms (phonetic, grammatical and syntactic) of the language were learned before the primitive form (spontaneous speech).

Lambert and Tucker theorize that children from their first days in Kindergarten compare and contrast the two linguistic codes (one acquired in infancy and the other introduced at school) and construct personal glossaries, linking new sounds and impressions to known or experienced ones. They notice similarities and differences, and develop an attentive and inductive concern with words and meanings. Lambert and Tucker also conclude that the written word was important in developing linguistic competence by giving substance to vocabulary and schematizing modes of expression.

Each method of teaching a second-language cited is based on certain theoretical assumptions, but there appears to be no definitive answer yet to the question of how either a native or a second language is acquired (Tucker and d'Anglejean, 1972). Instead of constructing a theory from abstract concepts, as did Chomsky, a pragmatic approach may be more productive (see work in progress of Ervin-Tripp (1970). Rapaport and Westgate (1974), Miller (1970) among others). That is to say, an analysis of the factors associated with successful second-language learning may lead to determining the elements of its acquisition.

## B. IMMERSION PROGRAMMES IN CANADA

Because of the poor results in second-language learning generally experienced with methods other than immersion, in recent years in Canada, wherever it has been considered important to learn French, immersion programmes have been established. According to the Ontario Institute for Studies in Education (O.I.S.E.) there are now 53 French immersion projects in Canada, scattered throughout the ten provinces. These vary according to the grade level at which the immersion programme begins, the amount of time devoted to instruction in French and the stage at which the English language arts programme is begun (Swain, 1974).

In the Montreal area, there are examples of many varieties of immersion programmes. The St. Lambert is an early immersion programme, with instruction entirely in French beginning in Kindergarten and decreasing to 45% in grade VI. A second type of immersion programme is available for new students at the grade IV and grade VII levels, where 80% of the day is spent in French. Enriched French courses and subject matter in French are offered in secondary school.

The PSBGM offers both early and late immersion programmes. The early immersion programme is based on 100% French from Kindergarten to grade II; one hour a day

is spent on English Language arts in grade III, the rest of the day is in French; one hour a day is spent in French from grades IV to VI, the rest of the day is in English. The late immersion programme is offered to new students in grade VII (Sec. I) where one hour a day is spent on English Language Arts, the rest of the day being given over to French. Intensive French courses are offered from Secondary II to V for those who have come through the immersion programmes.

The Lakeshore School Board's immersion programme begins in grade IV. Instruction is entirely in French for that year and for grade V, decreasing to 40% in grade VII. New students may enter the immersion programme at the grade VII (Sec. I) level (late immersion) where they spend 55% of their day in French. They may continue the immersion programme in Sec. II, where the amount of time spent in French varies from school to school. Enriched French courses and subject matter are offered in the remaining three years of secondary school.

Baldwin-Cartier School Board offers a 100% French immersion programme at the grade VI level. In secondary school, students have the option of taking three of their subjects in French out of the seven offered.

In Ontario, the Peel County Board of Education

established a late French immersion programme at the grade 8 level in 1971 in Brampton, Ont. with 70% of instruction in French and 30% in English. At the grade 9 level, approximately 40% of the curriculum is taught in French. (Swain, 1974).

Swain (1974, 1976) concludes from testing results available that early and late French Immersion programmes lead to the development of superior French skills; that early immersion programmes do not affect performance in English-language skills if the children have some instruction in English Language Arts at the grade 2, 3, or 4 level. Achievement in subject areas taught in French and tested in English is comparable to that of students who were instructed in English.

The most extensive testing results available for late immersion programmes are those of the PSBGM. (Polich, 1971, 1972; Genesee, 1973, 1974, 1975). These indicate no significant difference in performance on English achievement tests between the immersion and the English control groups; higher achievement on the tests of French language skills than the English control groups, and in some cases achievement at the level of average francophone students. For example in mathematics, taught and tested in French, the immersion students performed at a level comparable to an average grade VII francophone group in

the Commission des Ecoles Catholiques de Montreal (CECM).

In his June 1974 report, Dr. Genesee noted that below average students achieved as highly as above-average students on all dimensions of the oral production test. These results were generally replicated in the 1975 tests, included in Chapter III of this study.

### C. THEORIES OF LANGUAGE ACQUISITION

From the reports cited, it appears that language immersion programmes produce the best results in the target language without unduly affecting achievement in the mother tongue or subject matter. It is my intention now to examine some theories of language acquisition which might explain this phenomenon.

#### 1. Noam Chomsky

Chomsky's position is primarily a philosophical one (Chomsky, 1972). He bases his views on Cartesian dualism and a study in 1660 called the Port Royal Grammar. Descartes postulated that the theory of the corporeal body, even when sharpened and clarified to its limits, could not account for facts obvious to introspection and observation of other human beings, including thought and language. Chomsky also cites the American philosopher, C.S. Peirce, who held that the range of human intelligence could only be accounted for by a natural adaptation to

imagining correct theories and by the process of abduction which limits admissible hypotheses or presents them in a certain order. Chomsky then states that the acquisition of language is only possible on the basis of the principle of innateness, i.e., a predisposition to learning language.

The Port Royal Grammar initiated the tradition of philosophical grammar. It recognized the importance of the phrase as a grammatical unit, and presented the notions of surface structure as representing sound, and deep structure as representing mental analysis, a formal structure that relates to meaning. These concepts played a significant role in Chomsky's theory and were developed by him in considerable detail.

Chomsky proposes that "surface structure" refer to the representation of phrases which constitute a linguistic expression and the categories to which these phrases belong; "deep structure" to the representation of phrases that play a more central role in the semantic value of a sentence. However, surface structure may also play a part in determining semantic interpretation. He quotes as example the sentence, "John has lived in Princeton" (Chomsky, 1972, p. 107) which implies through the use of verb tense (surface structure) that John is still alive. A "generative grammar" is therefore posited to express the relationship (transformation) between deep and surface

structures, which when paired are called "syntactic objects", and to relate these to phonetic representations or representations of meaning.

The general structure of a grammar may be depicted thus: (Chomsky, 1972, p. 140).



FIGURE 2. General Structure of a Grammar According to Chomsky.

The base (B) of Deep Structure is subdivided into the categorial system: ("a context-free phrase structure grammar" Chomsky, 1972, p. 141) and the lexicon (which contains redundancy rules as well as all properties of lexical entries). Surface structure consists of the semantic component (S) the tranformational component (T) and phonetic representation (P).

A person who knows a language, therefore, has acquired a set of rules which associate sound and meaning in an infinite variety of ways. This ability exists



because the human being has an innate capacity to apprehend the rules of grammar of his language, which are particular aspects of a universal grammar.

## 2. B.C. Belyayev

Professor Belyayev of the University of Moscow (1963) has developed a theory based in part on D.S. Vygotsky's theory of the Second Signal System (SS2) by which man creates a mediator between himself and physical stimuli so as to react in terms of his own concept of reality.

Perception is the result of activity of the first signal system (SS1). Understanding is explained physiologically by the activity of the SS2. A person therefore has two signal systems, the first of which is activated by concrete stimuli; the second functioning under the influence of verbal stimuli. Perception can be characterized as sensory understanding (SS1) and understanding as conscious perception (SS2). Understanding involves verbally logical or ratiocinative thinking whereas intuitive perception is its sensory basis. In speech, the semantic content is understood and the linguistic form perceived.

These signal systems are to be understood as systems of temporary nervous links formed in the cortex of the hemispheres of the brain under the influence of stimuli.

A word is seen, heard or pronounced; it operates initially on the SS1. On the basis of the excitement of the SS1 by the word, a complex visual-auditory-motor image (the idea of the word) arises in the person's consciousness. Words remain SS1 stimuli only when a person apprehends an unfamiliar word. To activate the SS2, there must be considerable experience of perceiving the word in connection with objects denoted by it. The generalization of SS1 stimuli produces a concept which reflects the sum total of essential features of the object. This generalization activity is a basic function of the SS2. (See Figure 3)

#### Native language thought

As a result of perceiving external objects (A, B, C, D) the complexes of nervous links (1, 2, 3, 4) are activated, (see Figure 3) producing visual-auditory-motor images of words (7) which are connected to the complexes of SS2 links (9), producing the concept associated with the perception. An object which is named follows the path 2-9-7. The imagination of an object stimulated by a word passes in the opposite direction: 7-9-2.

#### Foreign language thought

Some nervous-cerebral mechanisms are partially the same as in the native language, others are new and different.

Cortex  
of the large cerebral hemispheres

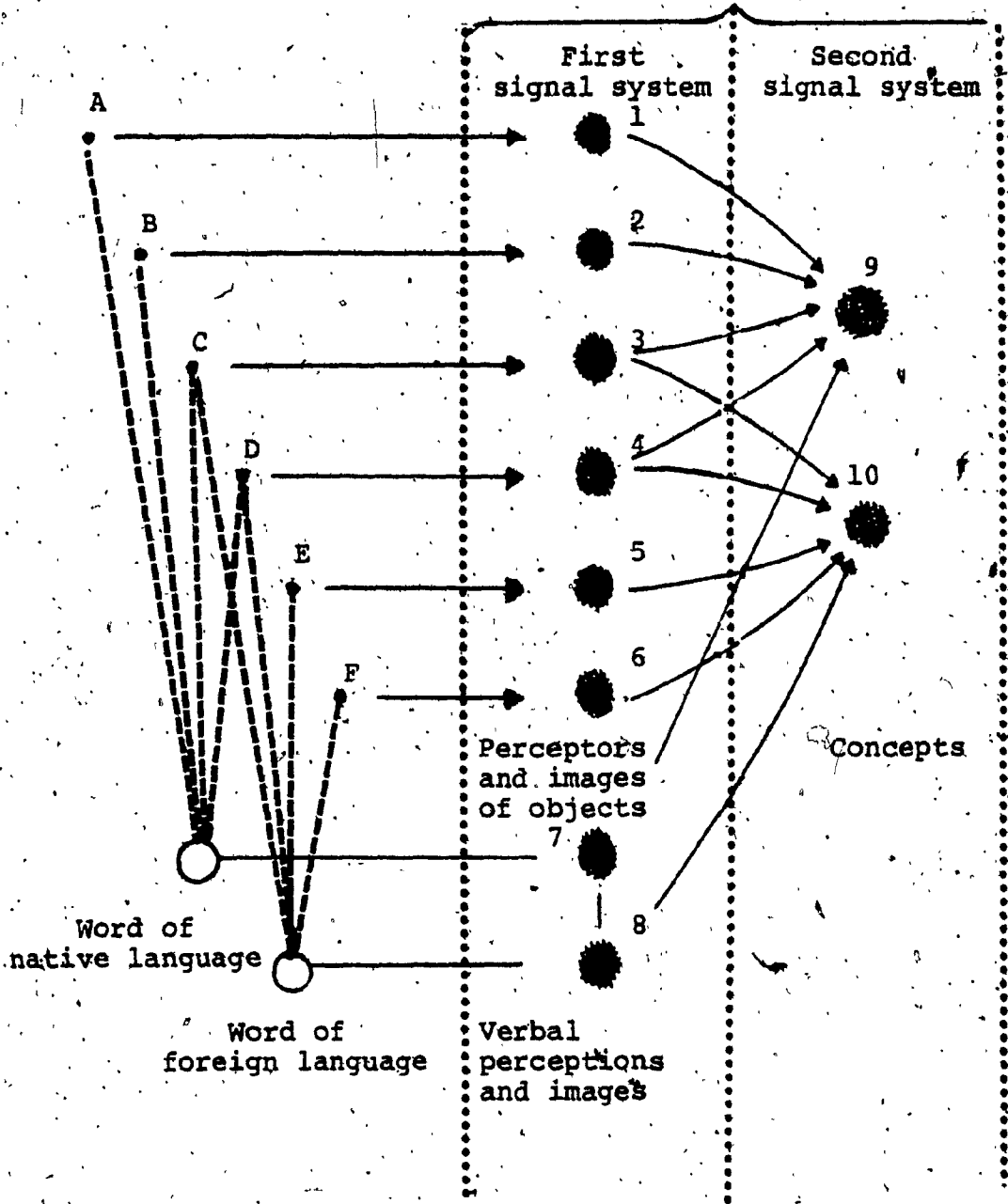


FIGURE 3. Physiological apprehension of language according to Belyayev.

The system of SS1 nervous links is similar to that established for the native language, nervous stimulation in the cortex of the hemisphere follows the path 4-10-8; under the influence of non-verbal stimulus, it goes the other way: 8-10-4. This is characteristic of a foreign language when it is linked directly with thought. In indirect use of the language (translation) the object named proceeds by the path 2-9-7-8, and on perception and understanding of the foreign word, it goes 8-7-9-2. As a consequence, the formation of the SS2 complex of nervous links which is the physiological basis of a concept expressed by a word does not occur. It must be remembered that the SS2 links only arise on the basis of the SS1 system.

Belyayev makes a point of distinguishing sense from meaning. Meaning is understood as the way in which a word can be related to the phenomenon which it denotes. Sense depends on linking the word with its concept as a reflection of reality. For example, students are sometimes told the Russian word for the French voiture is povozka. But voiture may refer to a car, a railway coach, a carriage, i.e., a means of vehicular land transport. It is important that this concept be understood.

Uniting the semantic aspect with its sensory base results in the complicated structure of a word, best

illustrated by a diagram. (See Figure 4)

For Belyayev the acquisition of language, whether native or foreign, depends on sensory perception and the formation of concepts. He offers a neurophysiological basis for his thesis as well as a linguistic one.

It is interesting at this point to consider the ideas of Ferdinand de Saussure, a Swiss linguist whose work dates from the early years of this century. Both Chomsky and Belyayev deal with language as concept and speech. F. de Saussure (1959) said that the only proper methods of linguistic analysis were segmentation and classification. By applying these methods, the analysis can be made between syntagmatic patterns (patterns of literal succession in stream of speech: meaning) or paradigmatic patterns (relations among units that occupy the same position in the stream of speech: grammar). F. de Saussure considered langue as the total combination of signs<sup>2</sup> which serve as meaning, and parole as the

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<sup>2</sup>F. de Saussure's terminology evolved. He substituted semiology for linguistics as the name for a general science which would study "the life of signs within society". (de S., 1959, p. 16) "Signe" became the label given to the wedding of sound and concept, which is completely arbitrary. [Chomsky agrees on this point (Chomsky, 1972) saying there is no a priori necessity for a system relating sound and meaning to be of a highly specific nature.] "Signifié" (signified) was then the term applied to concept, and "signifiant" (signifier) that which was applied to sound-image.

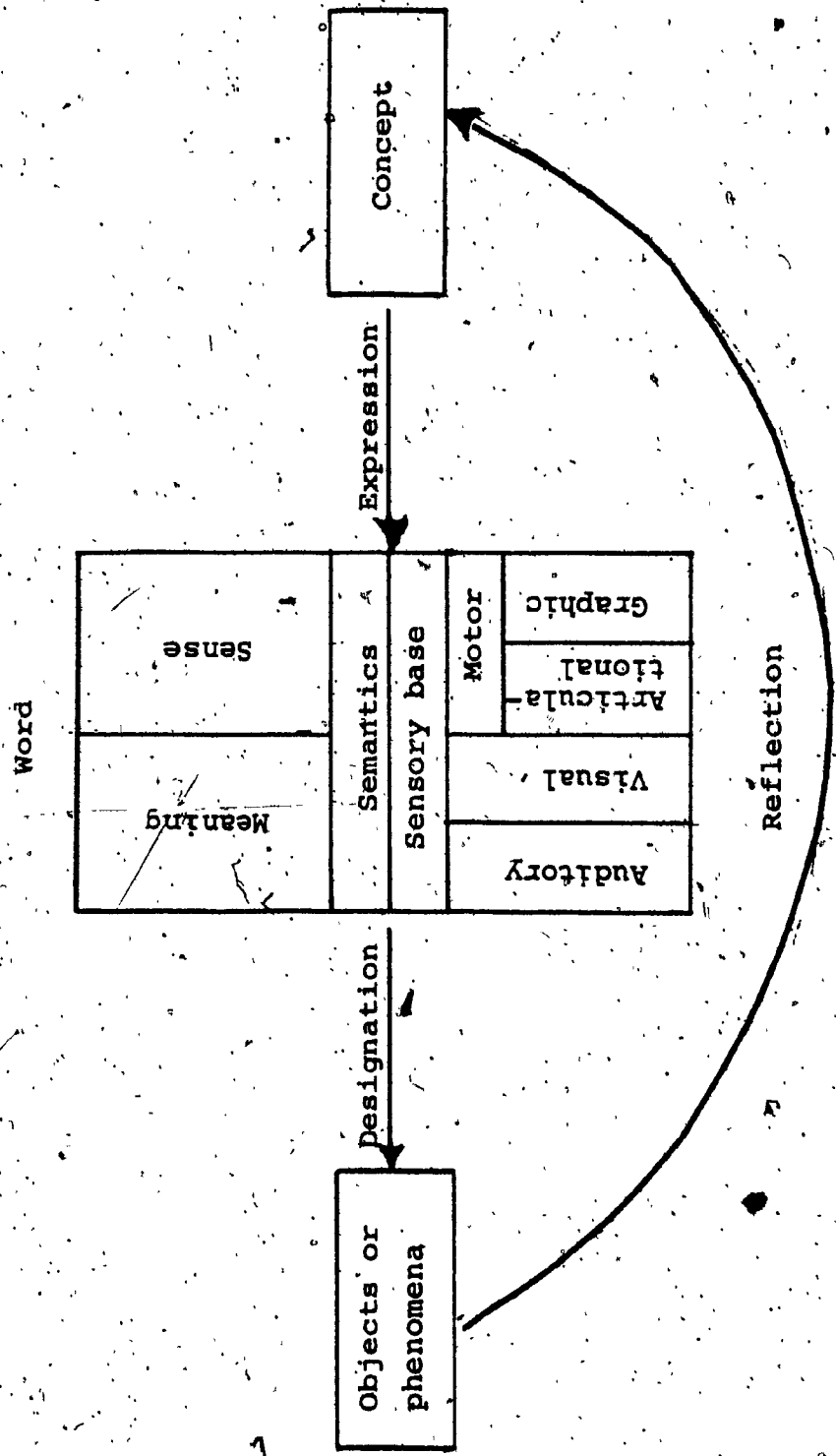


FIGURE 4. The structure of a word according to Belyayev.

individual use of the total system of signs (Leroy, 1966). Langue (language) and parole (speaking) are therefore interdependent; "The former is both the instrument and the product of the latter" (de Saussure, 1959, p. 19).

It can be seen from Figure 4 that Belyayev draws on Saussurian linguistic theory with respect to the sensory base and semantic content of the structure of a word.

Chomsky (1972) seems to have misunderstood the Saussurian concepts of parole (which he conceives to be sentence formation without reference to linguistic rule other than that governing sound and word forms) and langue. He states that syntax in this view is a trivial matter. In the opinion of the writer, it would seem that a Saussurian grammar could be represented by the same diagram as used in Figure 2, substituting Saussurian labels for Chomskian ones.

### 3. Jean Piaget

Jean Piaget's position on the acquisition of language is quite different from that of either Chomsky or Belyayev. Where these two men offer elaborate theories on how language is acquired, Piaget is concerned with the development of intelligence and the roles played by maturation, experience and socialization. Language is but one of the factors within these categories.

In his Comments (1962) on Vygotsky's Theory and Language, which Piaget wrote some twenty-five years after Vygotsky's original publication in Russian, Piaget sadly commented that he might have cleared up many points of contention if he had been able to meet Vygotsky and explain his work. Piaget's subsequent experimentation also clarifies questions which Vygotsky had raised. One point in particular was the definition of egocentrism, which Vygotsky misinterpreted. For Piaget, egocentrism has a particular meaning as a stage in development in which the child is unable to see things from another point-of-view (because of centration, irreversibility, etc.).

Egocentric speech was interpreted by Vygotsky according to the prevailing definition of egocentricity and was hypothesized as being the starting-point for the development of inner speech, which would eventually serve both autistic ends and logical thinking. Piaget states he is in agreement with this view, but that Vygotsky failed to understand the nature of egocentrism as the main obstacle to co-ordination of viewpoints and co-operation in the child. With regard to generalization, Piaget considers this ability to be the result of total action on the part of the child, (i.e., the elaboration of operational structures) not simply the result of perception of these structures.



Piaget has stated clearly that there is intelligent action before language (Piaget, 1976) and that the development of sensori-motor schemata are necessary to prepare the symbolic-representational stage in which speech appears.

Ginsburg and Opper (1969) claim that in Piaget's view language plays a limited role in the formation of a child's thought. An adult's language gives the child a glimpse of adult reasoning (for example, the use of a word to mean a "class" of things) but the child interprets language in terms of his own meaning, which is not necessarily the same as the adult's. It is probably more realistic to say that the child's thought depends less on his language than his language does on his thought.

A colleague of Piaget's, Dr. H. Sinclair, (Piaget, 1970) found clear evidence of different language capabilities used by children at different stages of development. She chose some children who had clear notions of conservation (Group A) and others who were unequivocally still at the level of nonconservation (Group B). The language used to describe certain objects attributed to dolls (pencils, balls, etc.) differed according to the comparative expressions used. The children without conservation used what the linguist Bull calls "scalars" ("large" and "small", "many" and "few") while children who had attained

conservation used "vectors" ("more" and "less", etc.). The language used by the A group was richer (four comparisons per group of objects: "here it is thick and the other is thin; here it is long and the other short") than that of the B group (two comparisons: "longer and thinner"). The conclusions of this experiment seem to indicate that operativity leads to structure language, rather than the opposite.

Other experiments have shown that teaching the language of operations does not bring about success (understanding) as for example the concept of class inclusion. Vygotsky claims that the child discovers inclusion by a combination of generalization and learning. The child juxtaposes the words rose and then flower, and when he makes the generalization "all roses are flowers" and discovers that the reverse is not true, he realizes that the class of roses is included in the class of flowers (Vygotsky, 1962). In fact, the problem is rather more complicated. An illuminating incident takes place in a film made in England (Checking Up) in which a man attempts to teach a child the concept of class inclusion. The child is shown a bouquet of flowers, consisting of some daisies and a number of tulips. After ascertaining that he knows both daisies and tulips are flowers, he is asked whether there are more daisies or more flowers. The child

replies "more daisies". A concise explanation is given to him, pointing out that both daisies and tulips are flowers. When the same question is asked again, the child repeats his previous answer with conviction. Piaget says this is because the child is unable to organize an operational system such that  $A$  (daisies) +  $A'$  (tulips) =  $B$  (flowers) and that  $A = B - A'$ , consequently  $A < B$ . Language was not able to function as the sole instrument of understanding.

An interesting point is made by Piaget (1972) with regard to the long period of concrete operations (roughly, between the ages of seven and twelve). He says that during this time operations remain relatively independent of language. The child acquires conservation of substance, of weight and of volume and uses the same linguistic arguments for each new notion, indicating that these notions do not depend on language. This is a finding which can be used to advantage in second-language learning. It may help to explain the success of the immersion programme at the grade VII level.

Piaget suggests that language is of greater importance at the level of propositional operations, since these are based on hypothetico-deductive processes and are connected to the exercises of verbal communication, but it is still not known whether language plays a constitutive role or an auxiliary one. He awaits the results of the

work of Hjelmslev and other linguistic structuralists and their discovery of sufficient connecting points with the algebraic and logistic analysis of the mechanisms of thought.

H. Sinclair-de-Zwart is quoted in Rapaport and Westgate (1974) as attributing the breakthrough for a theory of language acquisition within the framework of Piagetian developmental theory to a contradiction in Chomsky:

Thanks to Chomsky's ... theory of language, which aims at a system of rules rather than at a system of elements, our insight into the structural properties of natural languages has so far deepened that it becomes possible to envisage a theory of language acquisition which would be in accordance with the linguistic facts, with the known facts about children's verbal behaviour and with the theory of cognitive development in general. (p. 73)

Chomsky's hypotheses do not explain psychological processes involved in language use, but they provide a clearer idea of what the learner has to develop.

The publication of Sinclair-deZwart's theory of language acquisition, reconciling the aspects of linguistics, children's verbal behaviour and cognitive development, is awaited with interest.

From a Piagetian point-of-view, therefore, an individual's mental representation of experience is highly

personal. Through experience, verbal expression is developed. Reflection is also an integral part of experience, as demonstrated by its use in attaining conservation in operations. There seems to be no reason why these principles should not apply to the acquisition of a second language as well as to a first one.

#### D. THE CURRENT RESEARCH

The purpose of this study was to evaluate two different kinds of immersion programming, the activity-centred approach and the teacher-centred approach. In both programmes French, a second language, was used as the medium of communication.

An activity-centred class differs from a traditional one in several ways. The most important difference is a philosophical one: children, it is believed, want to learn; they are capable of making decisions about their learning; they are worthy of trust. The classroom environment is arranged so that resource material is close at hand, often arranged according to interest; there is usually more than one kind of textbook available per subject. The curriculum is inter-disciplinary rather than subject-oriented; it may vary as well in content from year to year according to the interests of the group. The role of the teacher is that of organizing the conditions for

learning and recording student progress rather than dispensing information. The atmosphere is relaxed with interaction between students as well as between them and the teacher. Students are expected to participate in discussion, research information on their own initiative, and share their findings with the group. This approach is designed to encourage the development of people who are creative, inventive and critical (in the sense of verifying before accepting what is offered them) (Silberman, 1973).

On the other hand, the teacher-centred (or traditional) approach is built on the premise that children come to school to be taught. Experts have devised the curriculum; they have researched each subject, determined its sequential presentation, and advised on appropriate textbooks. The classroom teacher is well-trained in pedagogical methods to motivate students, teach, explain and review facts. Students are generally expected to behave in a quiet, respectful way towards the teacher, to complete their assignments and homework, and to have assimilated the necessary subject matter before exam time. There are pre-determined standards against which the students are measured to decide whether they pass or fail. The goal for students in a teacher-centred programme is acquisition of knowledge.

1. Application of Theories of Language  
Acquisition to ACL

The Chomskian analysis of the structure of grammar (see Figure 2) suggests that language depends on Deep Structure (which embraces a lexicon and a phrase structure grammar). Chomsky believes the capacity to generate meaningful communication is innate and that knowing a language means acquiring a set of rules which associate sound and meaning in an infinite number of ways. Since every human therefore has the innate ability to create language, providing him with a new lexicon and appropriate semantic content as well as the necessary phonological components should ensure that he learn a new language. Thus, an ACL classroom should provide the student with the opportunity he/she needs to generate language by formulating and testing linguistic hypotheses about the structure of the target language.

However, it is not necessary to posit an innate ability for schematization to explain the acquisition of language. Belyayev (1963) has offered the SS2 as a neuro-physiological basis for the development of concepts based on sensory experience. This applies to the acquisition of both the native tongue and foreign languages.

As mentioned in the research of Lambert and Tucker.

(1972) Vygotsky proposed that the linking of a new language code with experience occurs in the learning of a foreign language.

Wilder Penfield (1959) contends that language is learned as a by-product of doing something else.

All of these theories would appear to support both AC1 and TC1 approaches to language learning. However, "Chomsky teaches that the functioning of language brings about a 'generative grammar' whose use calls for constant activity on the part of the subject, and shows the intervention of structures which are closely related to logical structures" (Piaget, 1976, p. 142). When Chomsky's concept of generative grammar is considered, the advantage would seem to favour the AC1 programme where a great deal of opportunity exists for self-initiated communication and self-directed learning.

Reference to Piagetian principles of cognitive development also support the possible superiority of the AC1 programme. The opportunity to experiment with language in a natural way without being measured against a pre-determined standard may be analogous to the development of egocentric speech, which as Vygotsky said, served both autistic ends and logical thinking. This free use of language which accompanies action and does not always



necessitate response may be a step which facilitates meaningful communication, i.e., assists the transition from egocentric speech to socialized speech. The atmosphere of an ACI programme is more conducive to this type of activity than the TCI programme, because the students interact freely in every-day situations, rather than being directed by the teacher into producing speech related to academic endeavours.

The fact that the students in grade VII are at different levels of the stage of concrete operations should be taken into account in their second-language learning programme. Piaget has pointed out that the same linguistic arguments are used during this stage to describe (in the mother tongue) the various notions of conservation (mass, space, volume, etc.) and the child acquires them. This natural repetition of language may permit the consolidation of knowledge from experience, thereby permitting normal developmental processes to take place without imposing undue stress on the student.

Each child has his own set of meanings, says Piaget, which he builds and changes. The freedom to have experiences essential to development exists in the ACI programme, where students have the possibility of exploring concepts at their own level.

Piaget contends that thought is antecedent to language, but that individual mental representation of experience is further developed through verbal expression. Time for reflection, which is necessary for building concepts and making knowledge one's own, is available in the ACl classroom in a way which is not possible in the TCl class. The child, working on his own, proceeds at his own pace and in his own learning style to reach his goal, whereas a student in the TCl class follows directions and finds the right answer for the question he has been asked.

Piaget rejects the theory of innateness proposed by Chomsky. In the development of the child (Piaget, 1976) there is no pre-established plan, but rather a gradual evolution which takes place according to the individual.

Genetic epistemology ... tends ... to show by psychological means that the roots of logic are to be found on the sensorimotor level and that, prior to language and on the level of its substructures, there is a logic of coordinations of action including the fundamental structures of order and interrelation. Language doubtless then remains a necessary condition for the completion of logico-mathematical structures, but it cannot constitute their sufficient condition. (p.140)

The genotype is species-determined, says Piaget (1976), but its evolution is related to equilibrium between

heredity and milieu. Piaget's theory of intelligence centres on biological adaptation, which involves a striving for equilibrium and mental organization. Two factors are necessary to bring about equilibrium: assimilation and accommodation. Assimilation is the process by which information is organized into mental structures, and accommodation is the process which modifies thought patterns to adapt to reality (Lavatelli, 1974). To achieve equilibrium, the child must transform data. He must perform the mental operations which bring about understanding. "To understand is to discover, or to reconstruct by re-discovery" (Piaget, 1975, p. 86). Linguistic transmission of knowledge is possible only when the logical structures are present in the mind of the child (Lavatelli, 1974).

Piaget (1975) attributes the beginnings of language to structures formed by the sensorimotor intelligence. He

recognizes neither external preformations (empiricism) nor immanent preformations (innateness), but rather affirms a continuous surpassing of successive stages. This obviously leads to placing all educational stress on the spontaneous aspects of the child's activity. (p. 99)

An ACL class provides an environment for spontaneous activity by the child in contrast to a TCL class where his learning is teacher-directed.

## 2. Relevance of Second-Language Learning Methodologies to ACL

It has been noted that the children in the Pilot Group of the St. Lambert project seemed relaxed and happy in spite of the high standards expected of them. Lozanov (1972) points out that the prestige of the institution and a feeling of respect for the teacher ("authority") brings about confidence in the student and motivates him to achieve high standards. Being part of a programme which is different from the regular school curriculum might carry with it a cachet of prestige and so also encourage the student to do his best. If he finds in that programme a relaxed atmosphere and the opportunity to pursue his own interests, he may very well learn faster and more efficiently with less mental and emotional stress.

Dodson's research reveals that a higher contact frequency is required for young students and for those in the low IQ range. This opportunity is more readily available in an ACL class than in a TCI class, because the student may work repetitively at whatever he is doing until he has mastered the task, without feeling the constraints of teacher or peer disapproval. Interacting with his fellow students also provides more contacts for the learner than he would have working only with the teacher.

Smith (1970) has defined the hierarchy of interrogation as a primary strategy for learning a second language. This is an activity which is not only readily available in the ACI class but essential for communication between youngsters who have acquired neither lucidity of expression nor a high degree of aural comprehension in the second language. It also provides an excellent tool for the teacher to guide learning.

The results of Mackey's research at the John F. Kennedy School in Berlin reveal that success in second language learning followed use of a wide range of techniques which were activity-oriented and which encouraged a spirit of co-operation rather than competition among students.

Among the techniques which may be used in an ACI class is a teacher-led information session. This however does not occur because of the exigencies of an imposed curriculum, but rather because its necessity has been felt by the students. In such instances, the teacher makes use of an eclectic methodology, using audio-visual techniques to eliminate the need for the mother tongue, and le Français Fondamental so that the students may easily understand the new information.

Given the validity of the theories of language

acquisition and cognitive development here cited, and the pertinence of those methodologies mentioned to the learning of a second language, it would seem possible to predict that the ACI class would provide a more productive learning environment than the TCI class.

To evaluate these two types of French immersion programmes, a series of tests to measure English and French language skills was administered to students in both programmes, as well as to those in control groups. These tests are described in Chapter II, and copies of them will be found in the appendices.

The hypothesis that an ACI class will provide a more fertile learning ground than the TCI class is based on theories of language acquisition and cognitive development and analysis of methodologies for second-language learning.

## CHAPTER II

### EXPERIMENTAL DESIGN, METHODS AND MATERIALS

#### Sample

Groups of students from four different Secondary I (grade VII) school programmes participated in this study: (see Table 1)

1. Teacher-centred immersion (TCL);
2. French as a Second Language (FSL);
3. Activity-centred immersion (ACL); and
4. French control (FC).

The students in each anglophone group were selected from a number of different schools in order to avoid bias due to the peculiarities of a particular school, whether through teaching methods, or level of students, etc. The schools were matched as far as possible to control for socio-economic factors, and tended to be middle to upper class. Approximately half of each sample was male, the other half female. An equal number of students in each anglophone group was selected from a below-average IQ range (80-94), and average range (96-115), and an above-average range (116+). The Canadian Lorge-Thorndike

TABLE 1

SAMPLE BY PROGRAMME, SCHOOL BOARD, SEX AND IQ

Students

Programme	School Board	MALE				FEMALE			
		High IQ	AV. IQ	Low IQ	Total	High IQ	AV. IQ	Low IQ	Total
TCI (2 schools)	PSBGM	12	13	12	37	12	12	9	33
ACI (4 schools)	LSB	9	5	9	23	11	15	11	37
FSL (3 schools)	PSBGM	12	12	12	36	12	11	12	35
FC (1 schools)	CECM	-	27	-	27	-	27	-	27
TOTAL		33	57	33	123	35	65	32	132



Intelligence Test (Level E, Form 1, 1967) was administered to students in the FSL and TCl groups in grade VI, 1974-75. The ACI students were tested with the same Canadian Lorge-Thorndike test in November 1975 in their first term of grade VII. The selection of students with different IQ's was intended to provide a representative cross-section of the school population and to increase the possibility of practical application of any significant findings.

However, no IQ data were available for the FC group. These students were selected by the principal and teachers as being average students. This school is considered to be an average school and is frequently used for testing purposes by the Commission des Ecoles Catholiques de Montréal (CECM) since results of tests there regularly fall in the average range. For example, this has been the case for several years on the CECM Tests de Rendement, standardized tests administered annually to students in schools within the CECM. In 1975, grade VI students from this school scored within the fifth stanine. In 1974, when the students were in grade V, they achieved an average standard score of 5.34 on the Test de Rendement en Français; in grade VI the students in the current sample achieved an average stanine score of 5.10 (Math) and 5.68 (Français). For purposes of evaluating the acquisition of the French language by anglophone students, it was

considered sufficient and important that the language used by average francophone students be used as a standard.

### Curricula

#### 1. Teacher-Centred Immersion Group (TCI)

Students in this group attended schools of the Protestant School Board of Greater Montreal (PSBGM). They had received instruction in French-as-a-second-language from Kindergarten to grade VI, i.e., from 20 to 30 minutes a day, five days a week. The second language teaching methodology during those grades was one based on audio-lingual precepts.

The immersion programme at the grade VII level is open to all students. It consists of 85% course instruction in French including the following subjects:  
French language arts, mathematics, physical sciences and social sciences. One period a day (45 minutes) is spent studying English language arts.

Teachers in the immersion programme are native speakers of French and tend to be Canadian. Teachers do not directly correct student mistakes in French during regular classes but do during French language arts. Hearing correct language from the teacher serves as a model for the students' acquisition of French.

The goals of the programme are primarily aural comprehension and oral fluency. Emphasis therefore is on oral and aural work with writing being introduced by Christmas. Accuracy in writing is not stressed.

## 2. Activity-Centred Immersion Group (ACI)

Students in this group attended schools of the Lakeshore School Board (LSB). They had received instruction in French-as-a-second language from Kindergarten to grade VI, for 20-30 minutes per day, five days a week. Students from one of the schools tested had followed an audio-visual programme, while students from the other schools received instruction based on an audio-lingual programme. Because the LSB encourages its teachers to provide extra time to students to learn French, these students may have had access to complementary material (based on a thematic approach) in addition to the core French-as-a-second-language programme.

In the Grade VII ACI programme, 50-55% of the student's day is spent in French. There were no entry criteria for this programme. Parents had a free choice of either a regular stream (English) programme or the immersion programme.

Scheduling of French immersion varies from school to school. In some schools, entire mornings are devoted

to the French programme (less 1½ hours per week for physical education) while in others, English language arts and options or mathematics may split up the school day. French language arts, physical and social sciences are offered in French in all schools in the study. These subjects are presented using a thematic approach and activity-centred learning as methodology. Math is taught in two schools in French, and in English in the other two. All schools follow language art courses and physical education in English. Students from one school took optional subjects (exploratory courses in Typing, Woodworking, Home Economics, etc.) in English as well.

Teachers in the immersion programme are bilingual, with native-like French speech. All were well-trained both as teachers and as specialists in teaching French as a second-language. They make language corrections only indirectly, as do the teachers in the TCl group, except during the period devoted to French language arts. Emphasis is placed on the student's involvement with his own learning, through choice of projects and interaction with his peers and the teacher in an informal atmosphere.

While the goals of the programme are primarily aural comprehension and oral fluency, reading and writing are begun almost at once. Accuracy in reading and writing are encouraged.

### 3. French as a Second-Language Group (FSL)

These students attended schools in the PSBGM. They had received the same instruction in FSL in grades K to 6 as their confrères in the TCI group, i.e., 20-30 minutes per day, five days a week. In grade VII they followed the regular curriculum for anglophone students and received French instruction for 45 minutes per day, five days a week, based on an audio-lingual method. Their teachers were specialists in teaching French-as-a-second-language.

### 4. French Control Group (FC)

Students in this group attended a school of the Commission des Ecoles Catholiques de Montréal (CECM). As previously discussed, these students represent average francophone students who could serve as a norm, against which the anglophone groups could be measured.

### Test Battery

The test battery included English and French language tests as well as an attitude questionnaire.

A summary of the tests administered to the various groups is shown in Table 2.

## A. ENGLISH LANGUAGE TESTS

1. Achievement Tests

The TCI and FSL groups wrote subtests of the California Achievement Tests, Level 4, Form A, (C.A.T.), while the ACI group wrote subtests of the Metropolitan Achievement Tests, Level Advanced, Form G, (M.A.T.). The latter achievement test had already been selected and administered by the LSB for testing on their students. Thus, it was decided to facilitate comparison among the groups on the different tests by converting the raw scores from both tests to stanine form (See Appendix A).

The following tests were administered. A summary of the tests administered to the various groups is shown in Table 2.

a) C.A.T. Vocabulary-M.A.T. Word Knowledge Tests

The C.A.T. Vocabulary subtest (Level 4, Form A) is a timed (10 minutes) group test. It consists of 40 multiple-choice items. The student has to select one item out of a list of four which is synonymous with a reference word appearing at the head of the list. Raw scores were converted into stanines.

The M.A.T. Word Knowledge subtest (Level Advanced, Form G) is a timed (15 minutes) group test consisting of 50 multiple-choice items. These items consist of incomplete sentences, the correct completion of which is to be found

TABLE 2

## TESTS ADMINISTERED TO STUDENTS BY PROGRAMME

Programme	Tests of English Language Skills	Tests of French Language Skills	Test of Oral Production*	Attitude Questionnaire
TC1	x	x	x	-
FSL	x	x	x	-
ACI	x	x	x	x
FC	-	x	x	-

\* sub-sample, 60% of n

among the choices offered. Raw scores were converted into stanines.

b) C.A.T. Reading-M.A.T. Comprehension Tests

The C.A.T. Reading subtest (Level 4, Form A) consists of three prose passages with related multiple-choice questions. It is a timed (40 minutes) group test. Raw scores were converted into stanines.

The M.A.T. Comprehension subtest (Level Advanced, Form G) consists of prose passages and questions with a multiple-choice format. The test is a timed (25 minutes) group test. Raw scores were converted into stanines.

c) C.A.T.-M.A.T. Spelling Tests

In the C.A.T. Spelling subtest (Level 4, Form A), the student has to select one of four written words which was mis-spelled. There were 32 items in this timed (8 minutes) group test. Raw scores were converted into stanines.

The M.A.T. Spelling subtest (Level Advanced, Form G) consists of 50 items to be completed in 15 minutes' time. The student is presented with sentences in which a word is underlined. The student must decide whether the underlined word is "Right" or "Wrong". There is also a "Don't Know" choice. Raw scores were converted into stanines.



## 2. English Writing Test

A sample of this test can be found as Appendix B.1. Three topic sentences were presented to each student. The student was asked to write a composition by completing one of the topic sentences. In total, the test took 45 minutes and the examiner structured the students' time as follows: 10 minutes were allotted for choosing the topic, jotting down ideas for the story, and organizing an outline; 30 minutes were then given for writing the composition; the last five minutes were given for review and corrections. The end of each segment of time was announced by the examiner.

Scoring was done by trained markers, according to nine different dimensions: punctuation, length, vocabulary, spelling, sentence accuracy, sentence complexity and variety, organization, originality, and overall. See Appendix B.2 for the rating scales and criteria that were used. Each student's script was coded to provide personal and group anonymity. Each composition was marked by two different markers, working independently. Two types of scales were used: 1. Appropriate and Inappropriate for punctuation and length; and Superior, Average and Below Average for vocabulary. 2. Values of 1-5 (Unacceptable--Excellent) for spelling, sentence accuracy, sentence complexity and variety, organization, originality and

overall. The average of the student's two marks from both markers on each scale was used in the statistical analyses.

## B. FRENCH LANGUAGE TESTS

### 1. Test de Rendement en Français

This is a standardized test designed and published annually by the Commission des Ecoles Catholiques de Montréal (CECM). The Grade V level was used (Appendix C) since pretesting by the PSBGM had shown that the Grade VII level was too difficult for anglophone control students. The test consisted of 45 items which measure the following types of language skills: spelling, synonyms, antonyms, verb tenses, vocabulary building, alphabetization, pronunciation, word meaning, parts of speech, sentence order, and gender. Raw scores were converted to stanine equivalents which are determined in November of each school year in the schools of the CECM.

### 2. Test de Rendement en Mathématiques

This test is also a standardized test devised by the CECM and administered annually in their schools. The Grade VII level of the test was given to all students (Appendix D). Raw scores were converted into stanines based on results from the CECM testing in November 1974.

3. Test de Compréhension Orale (Listening Comprehension)

This test was based on a passage from a book Le Canada Sans Passeport by E. Cloutier. It was devised and recorded by the PSBGM. It was read twice: once completely, and once, inserting questions after appropriate sections of text. The story was read by a man; the questions were asked by a woman, and the choice of answers was given by the same woman. The tape was presented by means of a reel-to-reel tape-recorder. Answers were recorded by the students on a multiple-choice answer sheet. Raw scores were used in the statistical analysis. (See Appendix E for a transcript of the tape).

4. Test de Lecture "California"

This test is a French adaptation, by A. Dehant and A. Gille, of the California Reading Test (Appendix F). For the sake of this evaluation it was divided into two sections: 90 multiple-choice items to measure vocabulary and 29 multiple-choice items to measure comprehension. Raw scores were analyzed statistically.

5. Test de Production Orale

Because of the difficulties in evaluating oral production, a sub-sample of the entire sample was used.

Sixty percent of all students from each group were evaluated in this part (See Table 3). The basis of the evaluation was an individual conversation between each student and a trained tester. A cartoon sequence was shown to each student (see Appendix G) and he/she was asked to tell the story depicted by the cartoon. The student was then asked a number of relevant questions about his interests and plans for the future, or experiences of the past. The interviewer was a native francophone and was highly-skilled to develop the questions according to the interests of each individual.

Evaluation of the speech sample was done by two trained raters, both native French speakers. The tapes on which the conversations had been recorded were cut into individual student segments. These were coded and the segments were then spliced together in random order so as to ensure anonymity of the speaker. Each conversation was scored by two different raters working independently. Dimensions of evaluation included listening comprehension, pronunciation, grammatical correctness, vocabulary, and fluency of communication. All were scored subjectively on a scale of 1-5, with 0 used when the subject did not speak sufficiently to make an evaluation possible and 5 used for native-like ability. See Appendix H for the criteria used to rate each dimension. The average of the

TABLE 3

SUB-SAMPLE FOR TEST DE PRODUCTION ORALE

BY PROGRAMME, SEX AND IQ

Programme	MALE				FEMALE			
	High IQ	Av. IQ	Low IQ	Total	High IQ	Av. IQ	Low IQ	Total
TCI	5	6	5	16	5	6	2	13
ACI	8	2	9	19	4	7	4	15
FSL	7	6	1	14	6	6	3	15
FC	-	15	-	15	-	15	-	15
Total				64				58

two raters' evaluations on each scale was calculated for each student.

### C. ATTITUDE QUESTIONNAIRE

This questionnaire was completed by the ACI group only. A more extended version of it had been administered to the TCI and FSL groups in Montréal in a previous year (see Genesee, 1974, for these results). However, it was considered important to determine the ACI students' reaction to the new and recent programme. The questionnaire consisted of nine questions (see Appendix I for a copy) which assessed the students' attitude toward their year in a French immersion class. Students did not identify themselves on the test. The results were tabulated in a form appropriate to each question, whether by percentage of answers to multiple-choice items, by rank order when students were asked to express a preference, or as summaries of opinions expressed.

### ADMINISTRATION OF THE TESTS

Tests were administered to the TCI, FSL and FC groups under the supervision of the Research Officer of the PSBGM, Dr. Fred Genesee. Tests were administered to the ACI group either by the author or by an assistant working under the supervision of the author. The same standardized procedures were used with the ACI group as

were used for the other groups. These tests were administered during the last three weeks of May, 1975.

## CHAPTER III

### PRESENTATION AND ANALYSIS OF RESULTS

The results of all tests given are summarized in tabular form. A three-way analysis of variance (unweighted means solution for unequal  $n$ ) was performed on scores other than those of the Attitude Questionnaire. Where significant differences were revealed by the analysis of variance, separate post hoc Tukey Honestly-Significant-Difference (HSD) Tests were performed to locate the significant difference. The Tukey procedure is conservative and reduces the probability of Type I errors (Winer, 1971). Because they are more precise, taking into account unequal  $n$ , the Tukey scores are the source of information for main effects among groups, and are shown as the adjusted means in the Summary of Mean Scores Tables. The interaction effects are the result of the general three-way analyses of variance.

Scores from the Attitude Questionnaire have been expressed as required by each question: in percentage of students answering multiple-choice questions, rank-ordering of preference of given answers, or summaries of opinions expressed.



## A. ENGLISH LANGUAGE TESTS

### 1. C.A.T.-M.A.T. Achievement Tests

Three separate three-way analyses of variance were performed on the scores from the vocabulary, reading, and spelling subtests of the C.A.T. and M.A.T. These scores were expressed in stanines. The independent variables were Programme (TCI, ACI, and FSL), IQ (below average, average, and above average), and Sex of Student (male, female).

#### a) C.A.T. Vocabulary--M.A.T. Word Knowledge tests

A summary of the analyses of variance for the results from the Vocabulary test is presented in Table 4A. There were no significant differences among the three programme groups.

There was a significant difference among the IQ groupings. Results of the Tukey tests indicate that the low IQ grouping ( $\bar{X} = 5.07$ ) scored statistically lower than both the high grouping ( $\bar{X} = 6.90$ ) and the average grouping ( $\bar{X} = 6.37$ ) where the latter groups did not score significantly differently from each other (See Table 4B).

There was no significant difference between the boys and the girls.

TABLE 4A  
 Summary of Analysis of Variance for  
 CAT Vocabulary--MAT Word Knowledge Test  
 (Stanines)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	1.32	.50	.61
IQ	2	50.96	24.39	.001
Sex	1	.04	.01	.90
<u>Interaction Effects:</u>				
Programme x IQ	4	6.02	3.21	.01
Programme x Sex	2	3.78	2.01	.13
IQ x Sex	2	1.76	.94	.60
Programme x IQ x Sex	4	6.52	3.47	.009
Experimental Error:	162	1.88		

TABLE 4B  
 Summary of Mean Vocabulary Scores by IQ on the  
 CAT Vocabulary--MAT Word Knowledge Tests  
 (Stanines)

	TCI	ACI	FSL	Total	TK
High IQ	6.70	7.12	6.90	6.91	6.90
Average IQ	6.36	6.03	6.65	6.35	6.37
Low IQ	5.22	5.81	4.27	5.10	5.07
Total	6.10	6.32	5.95	6.16	
TK	6.11	6.32	6.03		

There were significant Programme x IQ and Programme x IQ x Sex interactions.

Since interaction effects depend on both or all variables, this could mean the IQ level might affect one programme group and not another, and that the sex of the student might be a factor in one group and not another. In the first case of interaction effect, the significant difference lies in the IQ level (See Table 4B). Both average IQ groupings of the TCI and FSL programmes scored higher than the ACI programme group, whose high IQ grouping scored highest of all groups. The low IQ grouping of the ACI programme scored higher than both TCI and FSL programme groups (See Figure 5).

The Programme x IQ x Sex interaction is explained by the occurrence of higher means for average IQ boys ( $\bar{X} = 6.92$ ) than for average IQ girls ( $\bar{X} = 5.82$ ) in the TCI programme, while low IQ boys ( $\bar{X} = 6.33$ ) scored higher than average IQ girls ( $\bar{X} = 6.07$ ) in the ACI programme. In the FSL programme, average IQ girls ( $\bar{X} = 6.60$ ) scored higher than the high IQ girls ( $\bar{X} = 6.55$ ) whereas high IQ girls scored highest in both other programmes. The interaction analysis is shown in Figure 6.

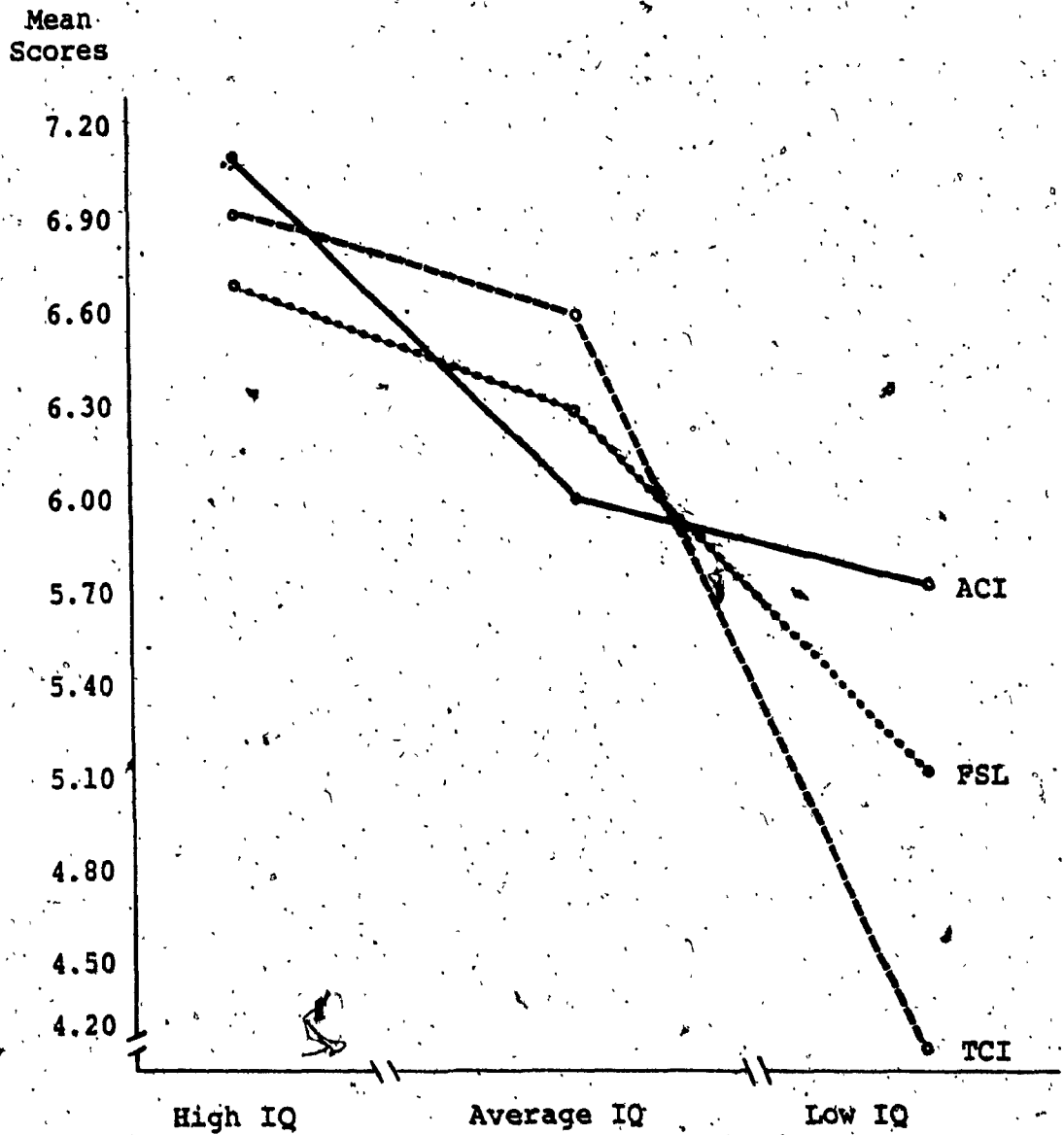


FIGURE 5. Programme x IQ interaction analysis on C.A.T. Vocabulary--M.A.T. Word Knowledge Test

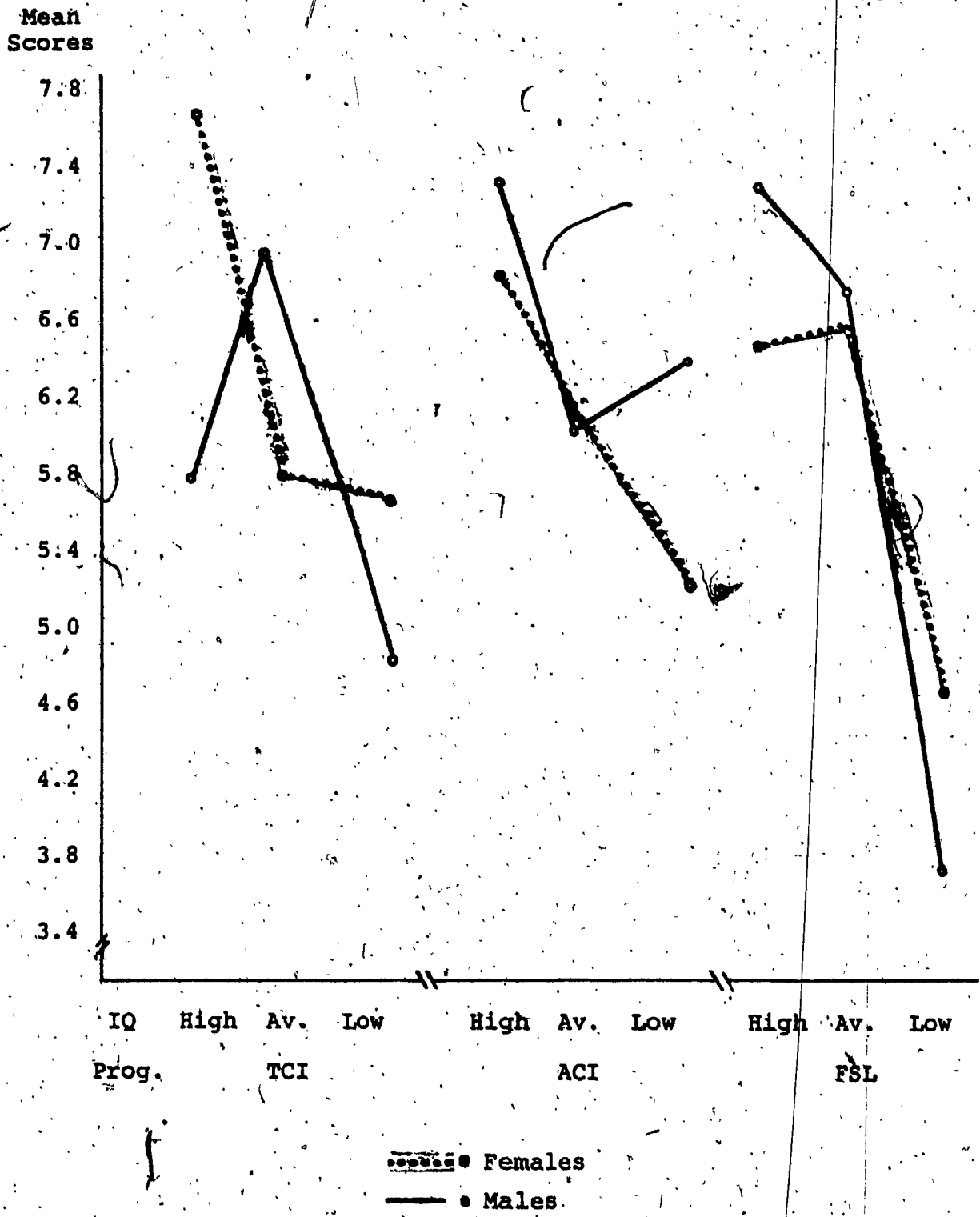


FIGURE 6, Programme x IQ x Sex interaction analysis on the C.A.T. Vocabulary--M.A.T. Word Knowledge Test.

b) C.A.T. Reading--M.A.T. Comprehension  
tests

There was a significant difference among the programme groups (See Table 5A). According to the Tukey test, the ACI group scored significantly higher ( $\bar{X} = 6.22$ ) than both the TCI group ( $\bar{X} = 5.08$ ) and the FSL group ( $\bar{X} = 4.80$ ) whose scores were not statistically different.

There was also a significant difference among the IQ groupings as shown in Table 5A. Mean scores by Programme and IQ are detailed in Table 5B. Although there was no statistically significant difference between the high IQ ( $\bar{X} = 6.31$ ) and average IQ ( $\bar{X} = 5.62$ ) groupings, they were both significantly higher than the low IQ grouping ( $\bar{X} = 4.00$ ).

The significant Programme x Sex interaction effect noted in Table 5A is due to the fact that in the ACI and FSL programmes, the males scored higher than the females, but in the TCI programme the females scored higher than males (See Figure 7).

c) C.A.T.-M.A.T. Spelling tests

There were significant main effects for all variables (See Table 6A). The TCI and FSL programme scored significantly lower (TCI:  $\bar{X} = 5.52$ ) and FSL:  $\bar{X} = 5.39$ ) than the ACI group

TABLE 5A  
 Summary of Analysis of Variance for  
 CAT Reading--MAT Comprehension Tests  
 (Stanines)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	33.60	9.80	.001
IQ	2	80.75	27.91	.001
Sex	1	5.05	1.34	.25
<u>Interaction Effects:</u>				
Programme x IQ	4	1.52	.66	.62
Programme x Sex	2	15.90	6.91	.001
IQ x Sex	2	2.53	1.09	.34
Programme x IQ x Sex	4	5.12	2.22	.07
Experimental Error:	62	2.30		

TABLE 5B  
 Summary of Mean Scores by IQ on  
 CAT Reading--MAT Comprehension Tests  
 (Stanines)

	TCI	ACI	FSL	Total	TK
High IQ	5.95	7.29	5.77	6.34	6.31
Average IQ	5.51	6.23	5.20	5.65	5.62
Low IQ	3.71	5.23	3.17	4.04	4.00
Total	5.06	6.25	4.71		5.36
TK	5.08	6.22	4.80		

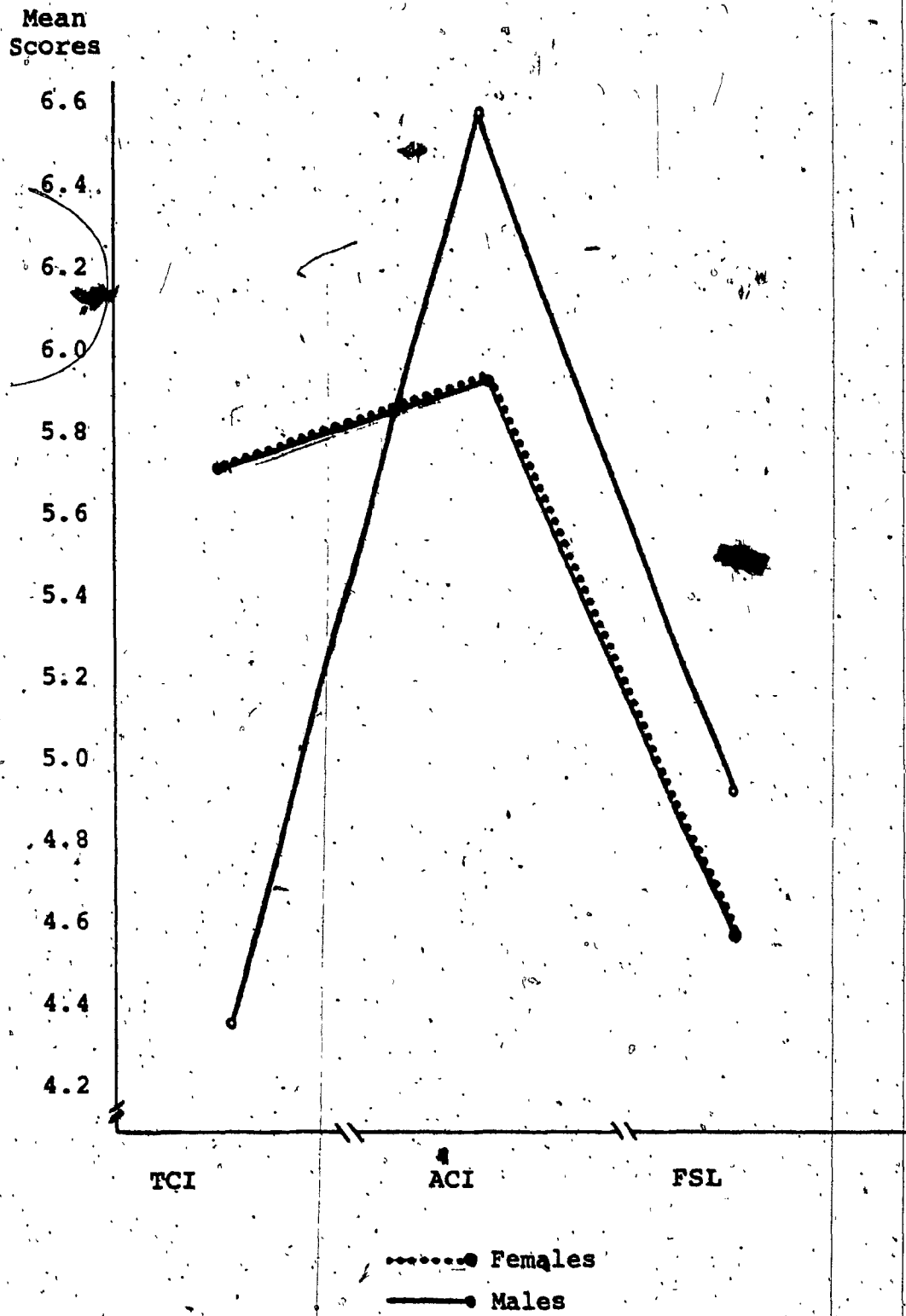


FIGURE 7. Programme x Sex interaction analysis on the C.A.T. Reading--M.A.T. Comprehension Test



TABLE 6A  
 Summary of Analysis of Variance for  
 CAT-MAT Spelling Tests  
 (Stanines)

Source of Variation	df	Mean Square	F Ratio	Significance Level <sup>o</sup>
<u>Main Effects:</u>				
Programme	2	21.38	7.59	.001
IQ	2	17.04	5.94	.003
Sex	1	55.79	20.45	.001
<u>Interaction Effects:</u>				
Programme x IQ	4	4.89	2.15	.08
Programme x Sex	2	2.92	1.28	.28
IQ x Sex	2	.13	.06	.94
Programme x IQ x Sex	4	5.59	2.45	.05
Experimental Error:	161	2.28		

TABLE 6B  
 Summary of Mean Scores by IQ on  
 CAT-MAT Spelling Tests  
 (Stanines)

	TCI	ACI	FSL	Total	TK
High IQ	6.45	6.68	5.86	6.33	6.34
Average IQ	5.39	6.00	5.65	5.68	5.73
Low IQ	4.94	6.54	4.42	5.29	5.25
Total	5.59	6.41	5.31	5.80	
TK	5.52	6.49	5.39		

( $\bar{X}$  = 6.49) See Table 6B.

The low IQ grouping scored ( $\bar{X}$  = 5.25) significantly lower than the high IQ grouping ( $\bar{X}$  = 6.34). The average IQ grouping ( $\bar{X}$  = 5.73) did not score statistically differently from either the high or the low groupings.

Females had significantly higher scores ( $\bar{X}$  = 6.33) than males ( $\bar{X}$  = 5.21).

A significant Programme x IQ x Sex interaction effect at the .04 level is shown in Table 6A. This may be attributed to anomalies in each programme. In the TCI group the female low IQ grouping ( $\bar{X}$  = 6.14) scored higher than the average IQ females and than all male groupings in that programme, while males of low IQ ( $\bar{X}$  = 6.78) scored highest of the male groupings in the ACI programme. The female average IQ grouping scored highest ( $\bar{X}$  = 6.60) of all groupings in the FSL programme, both male and female. (See Figure 8) These deviant scores result in a significant interaction effect in the Spelling variable, although the effect is not an important one when the statistics on the test as a whole are considered.

## 2. English Writing Test

Separate three-way analyses of variance were performed on the scores of spelling, sentence accuracy,

Mean Scores

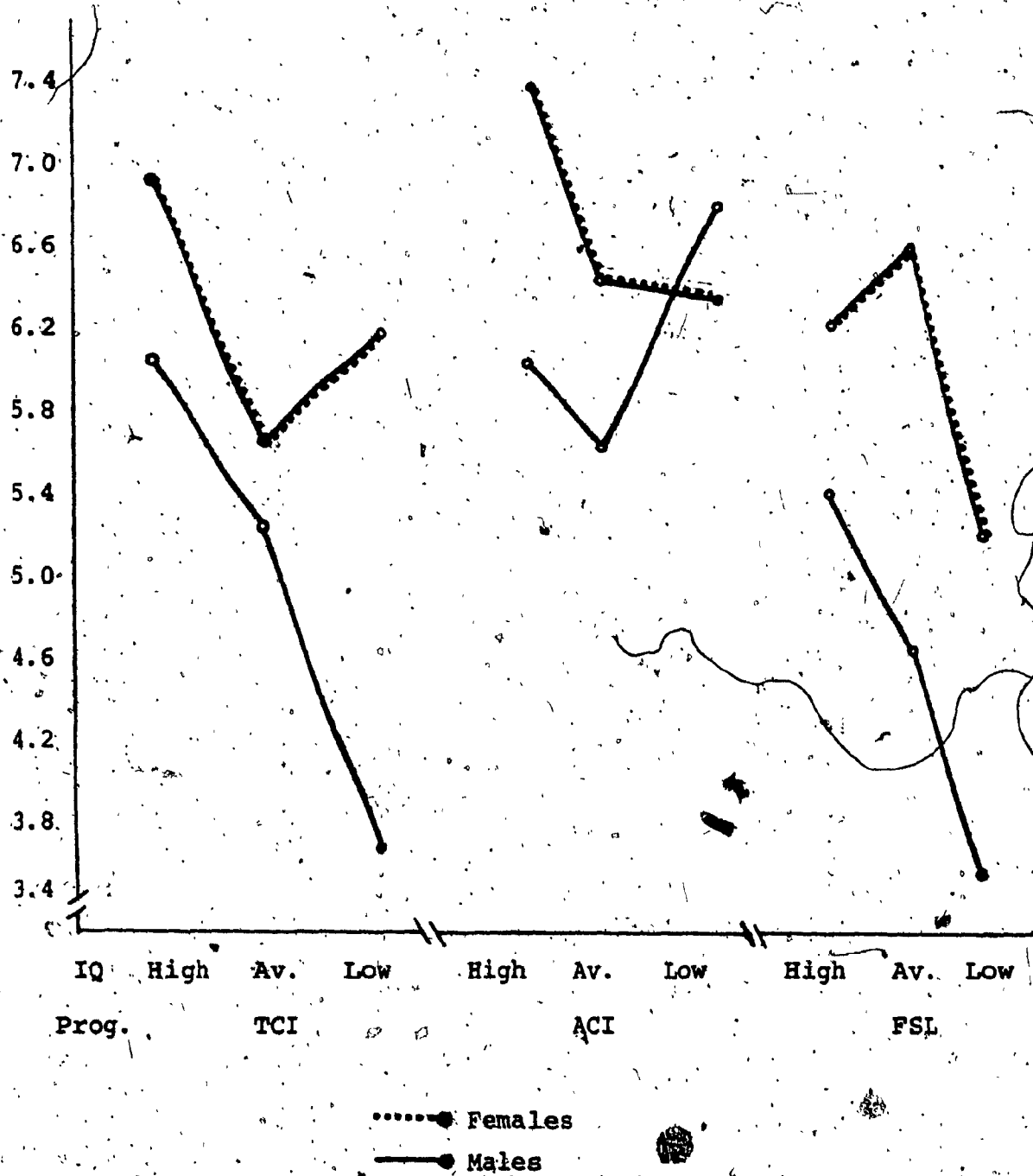


FIGURE 8. Programme x IQ x Sex interaction analysis of the C.A.T.-M.A.T. Spelling Test

sentence complexity, organization, originality, and overall. As well, post-hoc Tukey-HSD tests were performed following significant effects. As before, the variables were Programme, IQ Grouping, and Sex of Student.

Percentage frequency counts were made of the ratings for punctuation, length, and vocabulary. These scores represent the frequency of occurrence of each rating over the total possible (Table 13).

a) Spelling

A summary of mean spelling scores is given in Table 7B. The difference between groups was statistically significant (Table 7A). The ACI programme group scored significantly higher ( $\bar{X} = 3.38$ ) than the TCI and FSL programme groups whose scores were almost identical (TCI:  $\bar{X} = 2.98$ ; FSL:  $\bar{X} = 2.97$ ).

There was a significant difference according to sex of student, females being better spellers ( $\bar{X} = 3.32$ ) than males ( $\bar{X} = 2.88$ ). The group average was 3.11 which means that, on the average, the students were making 4 to 6 spelling errors.

There were no significant interaction effects.

TABLE 7A  
 Summary of Analysis of Variance for  
 the English Writing Test--Spelling  
 (Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	3.41	3.25	.04
IQ	2	3.11	2.96	.06
Sex	1	8.65	8.37	.004
<u>Interaction Effects:</u>				
Programme x IQ	4	.70	.66	.62
Programme x Sex	2	.26	.25	.78
IQ x Sex	2	.72	.67	.52
Programme x IQ x Sex	4	.19	.19	.94
Experimental Error:	163	1.06		

TABLE 7B  
 Summary of Mean Spelling Scores by IQ on  
 the English Writing Test  
 (Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	3.45	3.64	3.25	3.35	3.45
Average IQ	3.18	3.23	2.84	3.04	3.08
Low IQ	2.73	3.43	3.00	2.92	3.05
Total	3.12	3.43	3.03	3.11	
TK	2.98	3.38	2.97		

b) Sentence Accuracy

There were no significant differences among the programmes on this dimension. However, there were significant differences according to IQ grouping and sex of student, (Table 8A). As might be expected, the high IQ students ( $\bar{X} = 3.31$ ) scored higher than the average IQ students ( $\bar{X} = 3.11$ ) who scored higher than the low IQ students ( $\bar{X} = 2.51$ ). (See Table 8B). The low range was significantly different from both the high and average levels, who were not statistically different from each other.

Females scored significantly higher ( $\bar{X} = 3.27$ ) than males ( $\bar{X} = 2.70$ ) according to the Tukey-HSD procedure.

The group average of 2.98 is very slightly below the rating "adequate", meeting the objectives of grade VII level instruction.

There were no significant interaction effects.

c) Sentence Complexity and Variety

A summary of the mean scores is given in Table 9B according to Group and IQ levels. There were no significant differences among the programmes on this dimension. However, there were significant differences on both the dimensions of IQ and Sex of Student (See Table 9A).

TABLE 8A  
 Summary of Analysis of Variance for  
 the English Writing Test--Sentence Accuracy  
 (Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	1.88	1.90	.15
IQ	2	10.76	12.14	.001
Sex	1	12.34	13.22	.001
<u>Interaction Effects:</u>				
Programme x IQ	4	.92	1.07	.37
Programme x Sex	2	.67	.78	.54
IQ x Sex	2	.43	.49	.61
Programme x IQ x Sex	4	1.14	1.33	.26
Experimental Error:	163	.86		

TABLE 8B  
 Summary of Mean Sentence Accuracy Scores by  
 IQ on the English Writing Test  
 (Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	3.32	3.42	2.60	3.40	3.31
Average IQ	3.47	3.23	3.08	3.24	3.11
Low IQ	3.40	3.08	2.35	2.68	2.51
Total	3.12	3.26	2.94	2.98	
TK	3.00	3.14	2.79		

TABLE 9A  
 Summary of the Analysis of Variance for the  
 English Writing Test--Sentence Complexity  
 (Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	1.35	1.51	.22
IQ	2	9.85	12.35	.001
Sex	1	7.09	8.21	.005
<u>Interaction Effects:</u>				
Programme x IQ	4	1.42	1.77	.14
Programme x Sex	2	.31	.38	.69
IQ x Sex	2	.47	.58	.57
Programme x IQ x Sex	4	.49	.60	.66
Experimental Error:	163	.81		

TABLE 9B  
 Summary of Mean Sentence Complexity scores by  
 IQ on the English Writing Test  
 (Scale 1-5)

	TGI	ACI	FSL	Total	TK
High IQ	3.41	3.17	3.35	3.31	3.20
Average IQ	3.11	3.17	2.98	3.08	2.96
Low IQ	2.52	3.06	2.20	2.59	2.42
Total	3.01	3.13	2.84		2.86
TK	2.89	2.99	2.69		



The high IQ grouping had the highest rating ( $\bar{X} = 3.20$ ) followed by the average IQ grouping ( $\bar{X} = 2.96$ ) and the low IQ grouping ( $\bar{X} = 2.42$ ). The low grouping was significantly different from both the high and average levels, who were not statistically different from each other.

Females scored significantly higher ( $\bar{X} = 3.05$ ) than males ( $\bar{X} = 2.65$ ) according to the Tukey-HSD procedure.

There were no significant interaction effects.

According to group averages (adjusted mean), all groups were working at about the level expected for grade VII.

#### d) Organization

A summary of the mean ratings on organization is presented in Table 10B. There were no significant differences among Programmes but, once again, there were significant main effects due to IQ and Sex of Student (See Table 10A).

The high IQ grouping had the highest mean rating ( $\bar{X} = 3.21$ ) followed in descending order by the average IQ grouping ( $\bar{X} = 3.14$ ) and the low IQ grouping ( $\bar{X} = 2.53$ ). The low grouping was significantly different from both the high and average groupings, who were not statistically

TABLE 10A  
 Summary of the Analysis of Variance for  
 the English Writing Test--Organization  
 (Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	1.69	1.94	.147
IQ	2	8.42	10.58	.001
Sex	1	5.99	7.03	.009
<u>Interaction Effects:</u>				
Programme x IQ	4	.87	1.10	.36
Programme x Sex	2	1.29	1.64	.19
IQ x Sex	2	1.15	1.46	.24
Programme x IQ x Sex	4	.27	.34	.85
Experimental Error:	163	.79		

TABLE 10B  
 Summary of the Mean Organization Scores by  
 IQ on the English Writing Test  
 (Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	3.50	3.38	2.81	3.38	3.21
Average IQ	3.41	3.20	3.05	3.28	3.14
Low IQ	2.81	3.08	2.26	2.71	2.53
Total	3.24	3.21	2.91	2.96	
TK	3.04	3.07	2.76		

different from each other.

Female scores ( $\bar{X} = 3.13$ ) were significantly higher than those of males ( $\bar{X} = 2.77$ ), according to the Tukey-HSD procedure.

There were no significant interaction effects.

Both Immersion programmes, TCI and ACI met grade VII standards for organization of ideas: the FSL programme was slightly below standard.

e) Originality

A summary of the mean ratings on originality for each group is shown in Table 11B. There were no significant differences among Programmes. The only significant main effect was due to IQ (See Table 11A). The high IQ grouping had the highest mean rating ( $\bar{X} = 2.26$ ) followed by the average IQ grouping ( $\bar{X} = 2.14$ ) and the low IQ grouping ( $\bar{X} = 1.81$ ). The low grouping was significantly different from both the high and average groupings, who were not statistically different from each other.

There were no significant interaction effects.

The mean grouping rating of 2.07 indicates these compositions are "ordinary".

TABLE 11A  
 Summary of the Analysis of Variance for  
 the English Writing Test--Originality  
 (Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	1.08	2.24	.11
IQ	2	6.54	7.15	.001
Sex	1	.92	1.89	.17
<u>Interaction Effects:</u>				
Programme x IQ	4	.82	1.69	.16
Programme x Sex	2	.49	1.03	.36
IQ x Sex	2	.97	2.01	.14
Programme x IQ x Sex	4	1.05	2.17	.07
Experimental Error	163	.48		

TABLE 11B  
 Summary of the Mean Originality scores by  
 IQ on the English Writing Test  
 (Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	2.59	2.19	2.35	2.38	2.26
Average IQ	2.34	2.37	2.21	2.31	2.14
Low IQ	2.00	2.21	1.62	1.95	1.81
Total	2.31	2.26	2.06		2.07
TK	2.17	2.12	1.92		

f) Overall

A summary of the mean overall scores is given in Table 12B. There were no significant differences among Programmes. There were significant effects according to IQ and Sex of Student (See Table 12A).

The high IQ grouping once again had the highest mean score ( $\bar{X} = 3.16$ ) followed by the average IQ grouping ( $\bar{X} = 3.06$ ) and the low IQ grouping ( $\bar{X} = 2.43$ ). The low grouping was significantly different from both the high and average groupings, who were not statistically different from each other.

Females had a significantly higher mean rating ( $\bar{X} = 3.12$ ) than males ( $\bar{X} = 2.63$ ).

There were no significant interaction effects.

The combined group mean was  $\bar{X} = 2.88$ , suggesting that the compositions were at about the average level (3 on a scale of 1-5, or a "C" grade).

g) Punctuation, Length and Vocabulary

The results for these dimensions have been summarized in percentage frequency form in Table 13. There are two possible scores for Punctuation and Length: Appropriate and Inappropriate, and three for Vocabulary:

TABLE 12A

Summary of the Analysis of Variance for  
the English Writing Test--Overall

(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	1.47	1.70	.19
IQ	2	9.45	12.18	.001
Sex	1	.82	13.14	.001
<u>Interaction Effects:</u>				
Programme x IQ	4	1.67	2.24	.07
Programme x Sex	2	1.26	1.69	.19
IQ x Sex	2	1.65	2.22	.11
Programme x IQ x Sex	4	.66	.88	.52
Experimental Error:	163	.74		

TABLE 12B

Summary of the Mean Overall scores by  
IQ on the English Writing Test

(Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	3.50	3.02	3.35	3.29	3.16
Average IQ	3.40	3.10	3.15	3.22	3.06
Low IQ	2.79	2.95	2.15	2.64	2.43
Total	3.23	3.02	2.89	2.88	
TK	3.03	2.89	2.72		

TABLE 13

RESULTS OF ANALYSIS OF ENGLISH WRITING  
 TEST FOR PUNCTUATION, LENGTH AND VOCABULARY  
 (Percentage Frequency)

School Group	Punctuation		Length		Vocabulary	
	Appropriate	Inappropriate	Appropriate	Inappropriate	Superior	Average Below Average
TCI	64.5%	35.5%	58.2%	41.8%	10.9%	81.8% 7.3%
ACI	73.2%	26.8%	70.5%	29.5%	14.3%	75.9% 9.8%
FSI	61.5%	38.5%	52.9%	47.1%	10.6%	72.1% 17.3%

Superior, Average, and Below Average. The percentages have been calculated ignoring Sex and IQ factors.

Both immersion programmes, TCI and ACI, lead in the Appropriate criterion for Punctuation and Length. The significantly better performance of the ACI programme over the TCI programme may be the result of a different curriculum, since these students attend schools of the LSB while the TCI programme was in schools of the PSBGM.

The results on the dimension of Vocabulary for the immersion programmes are significantly better than those of the FSL programme. Superior and Average ratings were scored by 92.7% of the TCI programme and 90.2% of the ACI programme, compared to 82.7% for the FSL programme, 17.3% of whom scored Below Average.

#### SUMMARY OF RESULTS ON THE ENGLISH LANGUAGE TESTS.

The immersion programme groups scored higher than the FSL programme group, in achievement tests in the areas of vocabulary, reading and spelling. In the vocabulary subtest, IQ was the significant factor.

The ACI programme group scored highest on the reading and spelling subtests. The fact that the ACI programme group attained higher scores than the TCI



programme group may be due to the additional time spent in English (5 hours: English Composition and Literature; 5 hours: Mathematics; 1½ hours: Gym--total: 11½ hours) compared to 3-3/4 hours for the TCI programme. The FSL programme group spent 21½ hours per week in English. In addition, TCI and FSL programmes are part of the same school system and their curriculum may differ from that of the ACI school system.

In view of these findings, it is apparent that Immersion classes are performing as well as the English stream students (FSL) in native language skills of reading, vocabulary and spelling. This confirms findings by Lambert & Tucker (1972) and Genesee, Morin and Allister (1974) and Genesee and Chaplin (1975).

Except for the Spelling variable, IQ was a significant determiner of achievement on the English Writing test, with the high IQ grouping scoring highest and the low IQ grouping scoring lowest. Sex of student was important on five out of six of the variables (there being no influence on originality). A statistically significant difference according to programme was seen only on the dimension of Spelling, with the ACI programme group obtaining the highest mean rating ( $\bar{X} = 3.38$ ).

A year in a French Immersion programme does not

seem to have harmed the students' writing skills. They are doing at least as well as the FSL programme group which is following the regular English programme.

#### B. FRENCH LANGUAGE TESTS

Separate three-way analyses of variance were performed on the following scores of the anglophone groups:

Test de Rendement en Français (stanines)

Test de Rendement en Mathématiques (stanines)

Test de Compréhension Orale (Listening Compréhension)

raw scores: maximum 15)

Test de Lecture "California":

a) Vocabulary (raw scores: maximum 90)

b) Compréhension (raw scores: maximum 29)

Test de Production Orale (Scale 1-5)

a) Comprehension

b) Pronunciation

c) Grammar

d) Vocabulary

e) Communication

The independent variables were Programme, IQ grouping and Sex of Student. The data were further analyzed using the Tukey-HSD procedure, where necessary.

In addition, these analyses of variance were

performed on the scores of all students, including the French control (FC) programme group, for the Test de Compréhension Orale, the Test de Lecture "California", and the Test de Production Orale.

#### 1. Test de Rendement en Français

A summary of the analysis of variance for the Test de Rendement en Français is given in Table 14A. There are significant main effects attributable to all three independent variables. Each programme group was significantly different from the others. The TCI programme group performed significantly better than both other groups, while the ACI programme group performed significantly better than the FSL programme group. Group means are presented in Table 14B.

The IQ level was also a factor in achievement. Mean scores by IQ are presented in Table 14B. The high IQ grouping had the highest scores ( $\bar{X} = 4.40$ ) closely followed by the average IQ grouping ( $\bar{X} = 3.97$ ). While there was no significant difference between these two, there was between them and the low IQ groupings ( $\bar{X} = 2.81$ ).

There was also a significant main effect due to sex of student, the girls scoring higher ( $\bar{X} = 3.99$ ) than the boys ( $\bar{X} = 3.50$ ).

TABLE 14A  
 Summary of the Analysis of Variance for  
 the Test de Rendement en Français  
 (Stanines)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	36.89	20.12	.001
IQ	2	41.13	22.89	.001
Sex	1	2.17	2.89	.024
<u>Interaction Effects:</u>				
Programme x IQ	4	2.32	1.74	.14
Programme x Sex	2	.90	.68	.51
IQ x Sex	2	2.33	1.75	.18
Programme x IQ x Sex	4	2.30	1.72	.15
Experimental Error:	170	1.33		

TABLE 14B  
 Summary of the Mean Stanine scores by IQ on  
 the Test de Rendement en Français

	TCI	ACI	FSL	Total	TK
High IQ	5.33	4.08	3.63	4.35	4.40
Average IQ	4.58	3.56	3.45	3.87	3.97
Low IQ	3.54	3.16	1.84	2.85	2.81
Total	4.49	3.60	2.97	3.76	
TK	4.50	3.68	2.98		

There were no significant interaction effects.

## 2. Test de Rendement en Mathématiques

A summary of the analysis of variance scores for the Test de Rendement en Mathématiques is presented in Table 15A. There was a significant difference among Programme groups. The average stanines are presented in Table 15B. The difference between the TCI and ACI groups was not statistically significant. However, they were both significantly higher than the FSL group.

A significant difference was found among the IQ groupings. The low IQ grouping ( $\bar{X} = 4.02$ ) scored significantly lower than both average IQ ( $\bar{X} = 5.08$ ) and high IQ ( $\bar{X} = 5.60$ ) groupings who were not significantly different from each other.

There were no significant group interaction effects.

## 3. Test de Compréhension Orale

Separate analyses of variance for this test were performed for the three anglophone groups (Table 16A) and then for all groups, including the FC group. (Table 17A) In both analyses, programme group and sex of student proved to be significant main effects.

In the anglophone analysis, while there is no

TABLE 15A

Summary of the Analysis of Variance for  
the Test de Rendement en Mathématiques  
(Stanines)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	51.06	18.42	.001
IQ	2	39.88	13.79	.001
Sex	1	7.94	2.43	.12
<u>Interaction Effects:</u>				
Programme x IQ	4	.67	.28	.89
Programme x Sex	2	3.86	1.62	.19
IQ x Sex	2	1.58	.66	.52
Programme x IQ x Sex	4	2.48	1.04	.39
Experimental Error:	170	2.38		

TABLE 15B

Summary of the Mean Stanine Scores by IQ on  
the Test de Rendement en Mathématiques

	TCI	ACI	FSL	Total	TK
High IQ	6.54	4.72	4.43	5.56	5.60
Average IQ	5.88	5.17	4.05	5.03	5.08
Low IQ	4.65	4.35	3.21	4.07	4.02
Total	5.69	5.07	3.90		4.93
TK	5.69	5.07	3.92		

significant difference between the TCI ( $\bar{X} = 7.95$ ) and ACI ( $\bar{X} = 7.22$ ) programme groups, their scores are both significantly higher than the FSL programme group ( $\bar{X} = 5.80$ ). (See Table 16B). When all groups are considered, there is no significant difference between the TCI and the FC programme groups who scored highest, but there is between them and the ACI programme group. The significant difference between the FSL programme group and the ACI programme group remains (See Table 17B).

Girls scored significantly higher than boys in both analyses (See Tables 16A and 17A).

It is interesting to note that IQ did not significantly affect the scores in the results for the anglophone groups (Table 16B) although numerically the rank order of achievement followed the rank order of IQ from high to low.

Among the anglophone groups, there was a significant IQ x Sex interaction effect. Average IQ males scored highest ( $\bar{X} = 7.22$ ) in their grouping, while both high IQ ( $\bar{X} = 7.89$ ) and low IQ ( $\bar{X} = 7.46$ ) female students scored higher in their grouping (see Figure 9).

#### 4. Test de Lecture "California"

Separate analyses of variance were performed on the vocabulary and comprehension subtests of the Test de

TABLE 16A

Summary of the Analysis of Variance on  
the Test de Compréhension Orale

(Anglophone groups)  
(Raw scores: maximum=15)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	78.29	20.35	.001
IQ	2	3.37	.73	.49
Sex	1	18.89	4.15	.04
<u>Interaction Effects:</u>				
Programme x IQ	4	4.38	1.26	.29
Programme x Sex	2	4.31	1.24	.29
IQ x Sex	2	19.78	5.68	.004
Programme x IQ x Sex	4	6.29	1.81	.13
Experimental Error:	173	3.48		

TABLE 16B

Summary of Mean Scores by IQ on  
the Test de Compréhension Orale

(Anglophone groups)  
(Raw scores: maximum=15)

	TCI	ACI	FSL	Total	TK
High IQ	8.05	7.69	5.86	7.20	7.23
Average IQ	7.86	6.57	6.26	6.89	6.98
Low IQ	7.96	7.20	5.30	6.82	6.77
Total	7.95	7.15	5.81	7.00	
TK	7.95	7.22	5.80		



TABLE 17A

Summary of the Analysis of Variance on  
the Test de Compréhension Orale

(All groups)

(Raw scores: maximum=15)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	77.84	18.58	.001
Sex of Student	1	22.57	4.49	.04
<u>Interaction Effects:</u>				
Programme x Sex	3	1.83	.44	.74
Experimental Error:	237	4.14		

TABLE 17B

Summary of the Mean Scores by Sex on  
the Test de Compréhension Orale

(All groups)

(Raw scores: maximum=15)

	TCI	ACI	FSL	FC	Total
Female	8.47	7.49	5.87	8.67	7.62
Male	7.49	6.78	5.73	8.04	7.00
Total	7.98	7.13	5.79	8.35	7.30
TK	7.95	7.22	5.80	8.35	
Sex - Tukey :					
Male	7.59				
Female	6.98				
Total	7.30				

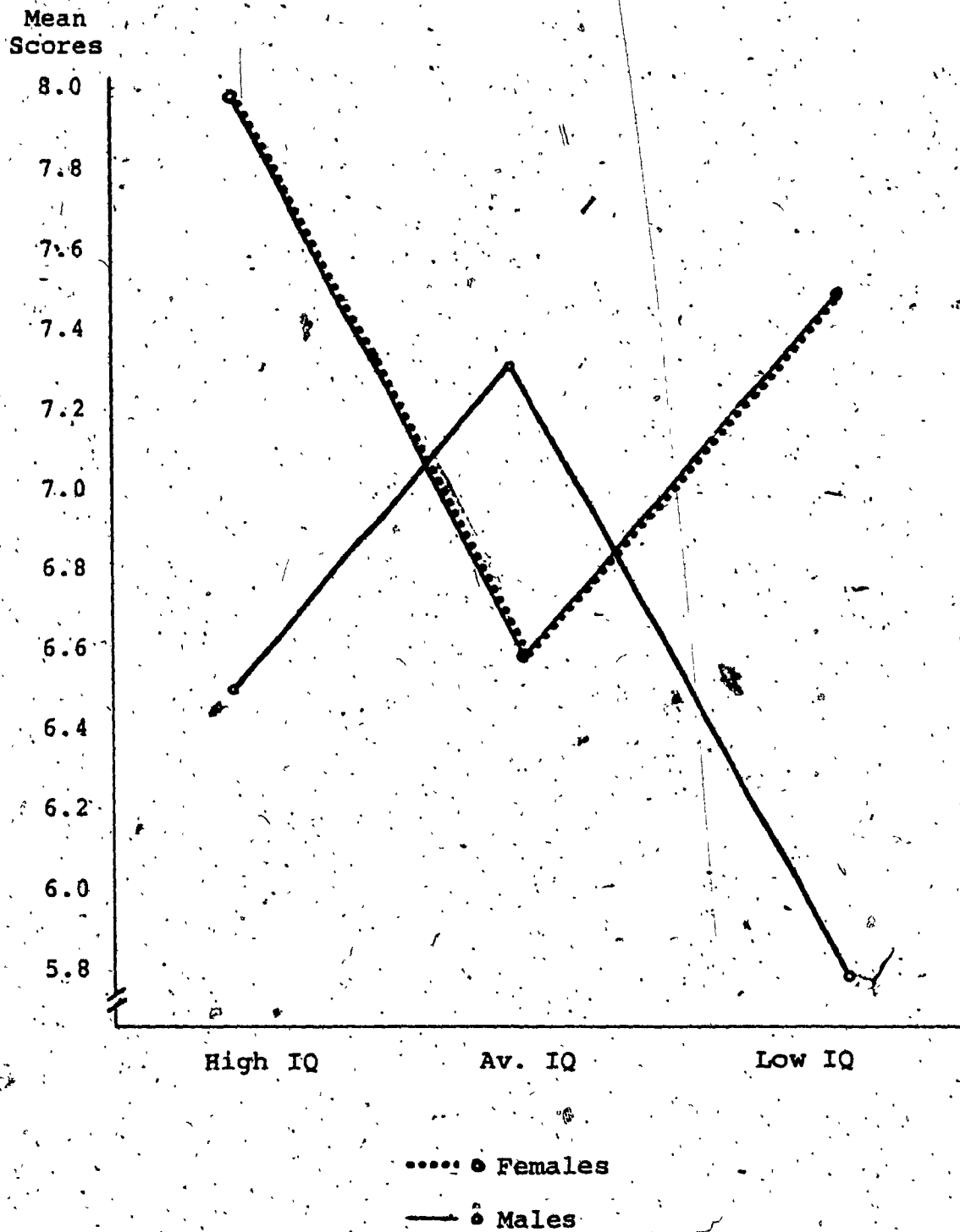


FIGURE 9. IQ x Sex interaction analysis on the Test de Compréhension Orale.

Lecture "California" for both anglophone groups and all groups (including the FC programme group).

a) Vocabulary subtest

There was a significant difference among programme groups on the vocabulary subtest in both analyses. (See Tables 18A and 19A)

In both analyses of variance, each group scored significantly differently from each other, according to the Tukey-HSD procedure. Mean scores of anglophone groups are summarized in Table 18B and those of the all-group analysis are to be found in Table 19B.

Another significant main effect was IQ among the anglophone groups. A summary of mean scores by group and IQ is presented in Table 18B. The low IQ grouping ( $X = 40.69$ ) was significantly lower than the average ( $X = 48.56$ ) and high IQ grouping ( $X = 49.88$ ), which were not statistically different from each other.

There was a significant Programme x IQ interaction at the .02 level. The FSL average IQ grouping scored higher ( $\bar{X} = 44.57$ ) than the above and below average FSL groupings. The mean scores of other groups followed a descending order from high to low IQ. (See Figure 10)

TABLE 18A  
 Summary of the Analysis of Variance on  
 the Test de Lecture--Vocabulary

(Anglophone groups)  
 (Raw scores: Maximum=90)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	2,687.02	28.08	.001
IQ	2	1,534.69	14.22	.001
Sex	1	61.91	.50	.48
<u>Interaction Effects:</u>				
Programme x IQ	4	236.34	3.09	.02
Programme x Sex	2	10.95	.14	.87
IQ x Sex	2	79.18	1.03	.36
Programme x IQ x Sex	4	140.37	1.83	.12
Experimental Error:	173	16.25		

TABLE 18B

Summary of the Mean Scores by IQ on  
 the Test de Lecture--Vocabulary

(Anglophone groups)  
 (Raw scores: Maximum=90)

	TCI	ACI	FSL	Total	TK
High IQ	58.32	48.95	42.05	49.77	49.88
Average IQ	52.55	46.97	44.57	48.03	48.56
Low IQ	45.31	45.58	32.36	41.08	40.69
Total	52.06	47.17	39.66		46.49
TK	52.31	47.35	39.58		

TABLE 19A

Summary of the Analysis of Variance on  
the Test de Lecture--Vocabulary

(All groups)

(Raw scores: Maximum=90)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	379.56	41.11	.001
Sex of Student	1	306.70	2.24	.14
<u>Interaction Effects:</u>				
Programme x Sex	3	149.24	1.65	.18
Experimental Error:	237	90.58		

TABLE 19B

Summary of Mean Scores by Sex on  
the Test de Lecture--Vocabulary

(All Groups)

(Raw scores: Maximum=90)

	TCI	ACI	FSL	FC	Total
Female	53.50	47.30	40.03	61.93	50.69
Male	51.3	47.44	39.15	54.93	48.19
Total	52.36	47.35	39.58	58.43	49.12
TK	52.31	47.35	39.58	58.43	
<u>Sex - Tukey :</u>					
Male	50.20				
Female	47.96				
Total	49.12				

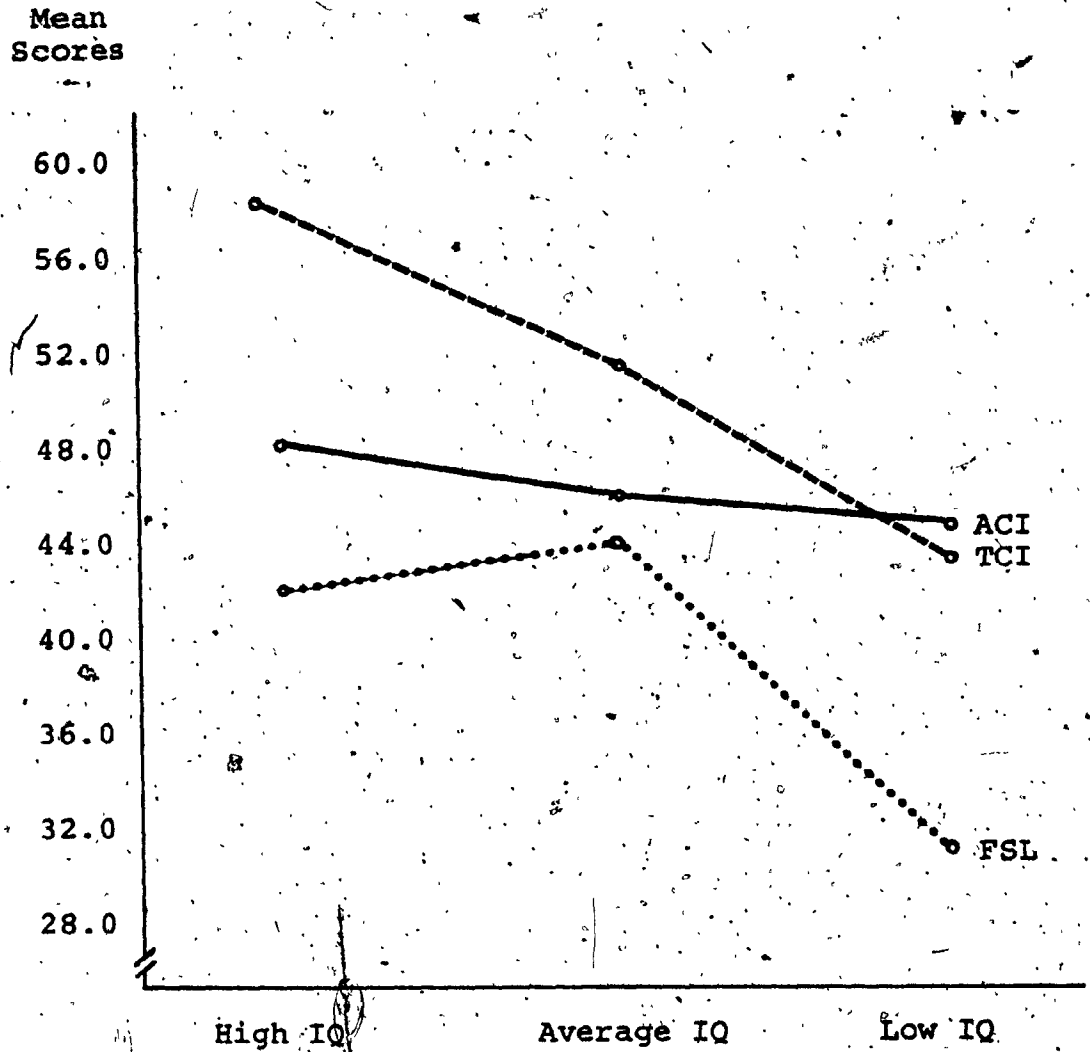


FIGURE 10. Programme x IQ interaction analysis on the Test de Lecture "California"-- Vocabulary

b) Comprehension subtest

In the Comprehension subtest, programme was a significant main effect in both analyses.

Among the anglophone groups, each group was significantly different from the others, the TCI group scoring highest ( $\bar{X} = 21.12$ ) the ACI next ( $\bar{X} = 16.45$ ) and the FSL group lowest ( $\bar{X} = 13.88$ ). See Table 20B. In the all-group analysis, the FC ( $\bar{X} = 19.80$ ), and the TCI ( $\bar{X} = 21.12$ ) were not significantly different from each other, and the ACI and FSL groups retain their significant difference from each other and from the leaders. It is interesting to note here that the TCI group scored higher than the native-speakers.

IQ was significant at the .001 level in the anglophone group analysis (mean scores are summarized in Table 20B) the low IQ grouping being statistically lower than the average ( $\bar{X} = 18.30$ ) and the high IQ groupings ( $\bar{X} = 19.42$ ), who were not significantly different from each other.

Sex of student provided a significant difference in the all-group analysis (See Table 21A) with the girls scoring higher ( $\bar{X} = 18.57$ ) than the boys ( $\bar{X} = 16.96$ ), according to the Tukey-HSD procedure. (See Table 21B)

TABLE 20A

Summary of the Analysis of Variance on  
the Test de Lecture--Compréhension

(Anglophone groups)  
(Raw scores: Maximum=29)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	885.21	39.90	.001
IQ	2	560.23	21.85	.001
Sex	1	101.34	3.28	.07
<u>Interaction Effects:</u>				
Programme x IQ	4	5.02	.31	.87
Programme x Sex	2	50.85	3.13	.04
IQ x Sex	2	21.89	1.35	.26
Programme x IQ x Sex	4	10.46	1.19	.31
Experimental Error:	173	16.25		

TABLE 20B

Summary of the Mean Scores by IQ on  
the Test de Lecture--Compréhension

(Anglophone groups)  
(Raw scores: Maximum=29)

	TCI	ACI	FSL	Total	TK
High IQ	23.12	18.55	16.36	19.34	19.42
Average IQ	21.74	17.97	14.99	18.23	18.30
Low IQ	18.50	13.31	10.24	14.01	13.75
Total	21.12	16.61	13.86		17.23
TK	21.12	16.45	13.88		



TABLE 21A

Summary of the Analysis of Variance on  
the Test de Lecture--Compréhension

(All groups)

(Raw scores: Maximum=29)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	682.91	32.24	.001
Sex of Student	1	158.41	5.50	.02
<u>Interaction Effects:</u>				
Programme x Sex	3	33.14	1.63	.18
Experimental Error:	237	20.29		

TABLE 21B

Summary of the Mean Scores by Sex on  
the Test de Lecture--Compréhension

(All groups)

(Raw scores: Maximum=29)

	TCI	ACI	FSL	FC	Total
Female	22.94	16.46	14.48	20.96	18.71
Male	19.46	16.43	13.30	18.63	16.96
Total	21.20	16.45	13.89	19.80	17.79
TK	21.12	16.45	13.88	19.80	
Sex - Tukey :					
Male	18.57				
Female	16.96				
Total	17.79				

The scoring of ACI males ( $\bar{X} = 16.81$ ) produced a Programme x Sex Interaction effect in the anglophone analysis. They scored higher than the ACI females ( $\bar{X} = 16.40$ ), whereas females scored higher in both other groups (TCI and FSL). (See Figure 11)

#### 5. Test de Production Orale

Separate analyses of variance were performed on the five dimensions of the Test de Production Orale for the anglophone groups only, and for all groups, including the FC group. As might be expected, there were significant differences according to programme in both analyses. In addition, some unusual differences are apparent in the analysis by IQ of the anglophone groups. These are not altogether unexpected, since they replicate findings by Genesee (1974, 1975).

##### a) Comprehension

There was a significant difference among school groups on the Comprehension subtest in both analyses. (See Tables 22A and 23A) Among the anglophone groups, the difference between the mean scores of the TCI programme group ( $\bar{X} = 4.40$ ) and of the ACI programme group ( $\bar{X} = 4.01$ ) was not statistically significant, while there was a significant difference between them and the FSL programme group ( $\bar{X} = 2.62$ ). (See Table 22B)

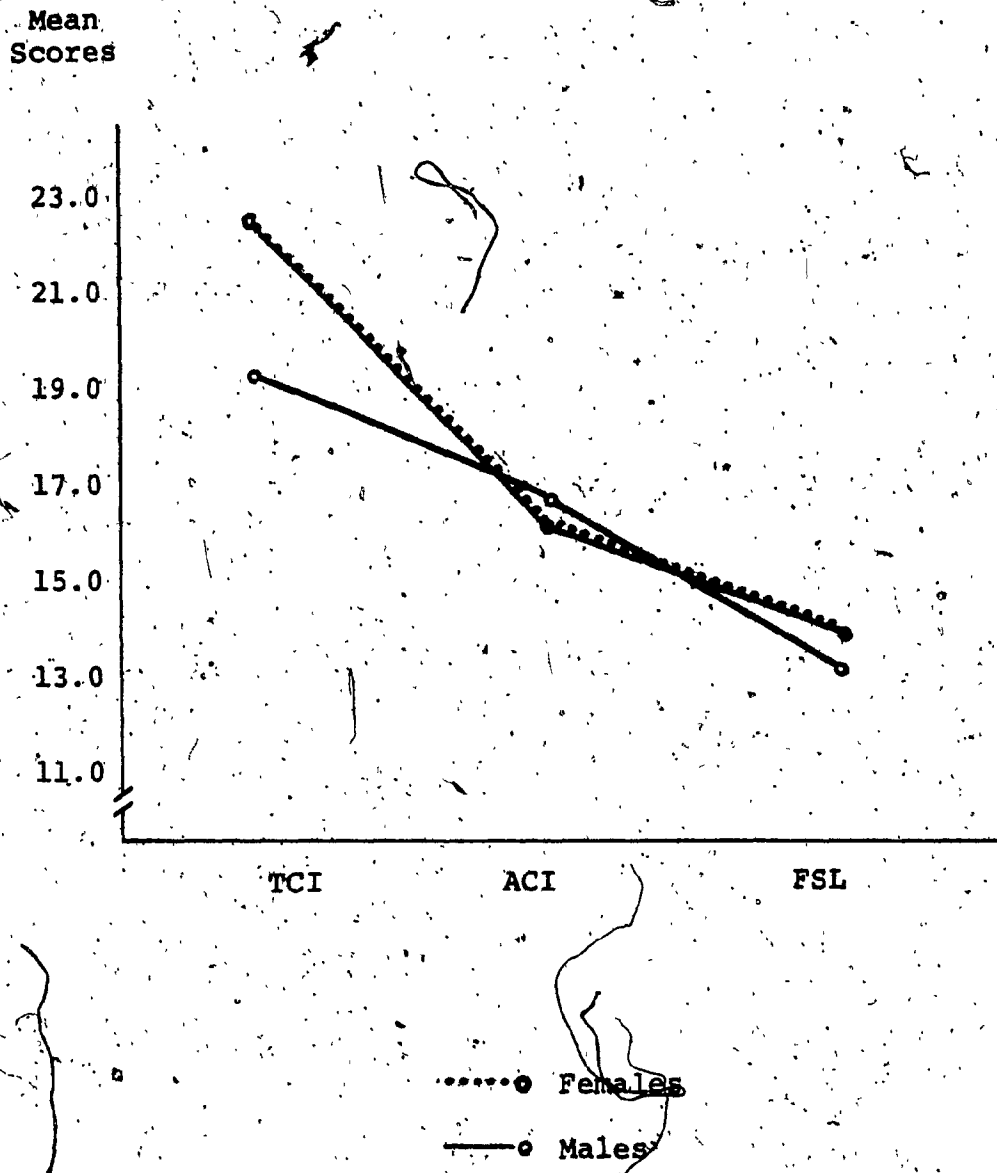


FIGURE 11. Programme x Sex interaction analysis on the Test de Lecture "California"--Comprehension.

TABLE 22A

Summary of the Analysis of Variance on  
the Test de Production Orale--Compréhension

(Anglophone groups)  
(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	25.61	22.18	.001
IQ	2	1.73	1.03	.363
Sex	1	1.36	.180	.37
<u>Interaction Effects:</u>				
Programme x IQ	4	1.66	1.58	.19
Programme x Sex	2	1.29	1.23	.29
IQ x Sex	2	1.57	1.49	.23
Programme x IQ x Sex	4	.39	.38	.85
Experimental Error:	74	1.05		

TABLE 22B

Summary of the Mean Scores by IQ on  
the Test de Production Orale--Compréhension

(Anglophone groups)  
(Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	4.70	4.00	2.61	3.77	3.71
Average IQ	4.83	4.18	3.08	4.03	3.89
Low IQ	3.75	4.14	1.33	3.07	3.39
Total	4.43	4.11	2.34	3.76	
TK	4.40	4.01	2.62		

TABLE 23A

Summary of Analysis of Variance on  
the Test de Production Orale--Compréhension  
(All groups)  
(Scale 1-5)

Source of Variation	df.	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	29.90	34.34	.001
Sex of Student	1	1.41	.89	.35
<u>Interaction Effects:</u>				
Programme x Sex	3	1.34	1.54	.21
Experimental Error:	114	.87		

TABLE 23B

Summary of the Mean Scores by Sex on  
the Test de Production Orale--Compréhension

	TCI	ACI	FSL	FC	Total
Female	4.92	4.00	2.73	5.00	4.16
Male	4.06	4.05	2.57	5.00	3.92
Total	4.49	4.03	2.65	5.00	4.02
TK	4.40	4.01	2.62	5.00	
<u>Sex - Tukey :</u>					
Male	3.91				
Female	4.13				
Total	4.02				

In the analysis of all groups, the FC programme group ( $\bar{X} = 5.00$ ) did not score significantly higher than the TCI group ( $\bar{X} = 4.40$ ). The ACI group ( $\bar{X} = 4.01$ ) now shows a significant difference when compared to the FC group. The FSL group scored significantly lower than the other three groups.

When considering the analysis of anglophone according to IQ (Table 22B) it should be noted that students of average IQ in each of the school groups scored highest. The total means of this grouping ( $\bar{X} = 4.03$ ) compares with  $\bar{X} = 3.77$  for the high IQ grouping and  $\bar{X} = 3.07$  for the low IQ grouping. However, reference to table 22B will show that the mean score of the average FSL group ( $\bar{X} = 3.08$ ) is considerably lower than the achievement of all IQ ranges of both immersion groups. The high achievement of the average IQ group in the immersion programme is a finding which recurs in oral testing and will be discussed further in the summary of results.

b) Pronunciation

Analysis of the Pronunciation dimension showed a significant main effect according to Programme in both analyses (See Tables 24A and 25A).

The statistical significance in the anglophone groups lies in the difference between the Immersion

TABLE 24A

Summary of the Analysis of Variance on  
the Test de Production Orale--Pronunciation  
(Anglophone groups)  
(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	15.89	18.00	.001
IQ	2	1.57	1.31	.27
Sex	1	1.22	.18	.67
<u>Interaction Effects:</u>				
Programme x IQ	4	.24	.34	.85
Programme x Sex	2	.76	1.09	.34
IQ x Sex	2	1.68	2.42	.09
Programme x IQ x Sex	4	1.25	1.79	.14
Experimental Error:	74	.69		

TABLE 24B

Summary of the Mean Scores by IQ on  
the Test de Production Orale--Pronunciation  
(Anglophone groups)  
(Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	3.80	3.56	2.51	3.29	3.26
Average IQ	3.75	3.54	2.33	3.21	3.12
Low IQ	3.15	3.22	1.50	2.62	2.79
Total	3.57	3.44	2.12	3.09	
TK	3.55	3.43	2.22		

TABLE 25A

Summary of the Analysis of Variance on  
the Test de Production Orale--Pronunciation

(All Groups)

(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	38.19	57.38	.001
Sex of Student	1	.44	.28	.60
<u>Interaction Effects:</u>				
Programme x Sex	3	.79	1.27	.29
Experimental Error:	114	.62		

TABLE 25B

Summary of the Mean Scores by Sex on  
the Test de Production Orale--Pronunciation

(All Groups)

(Scale 1-5)

	TCI	ACI	FSL	FC	Total
Female	3.92	3.40	2.33	5.00	3.51
Male	3.31	3.53	2.21	5.00	3.66
Total	3.62	3.46	2.27	5.00	3.56
TK	3.55	3.43	2.22	5.00	
<u>Sex - Tukey :</u>					
Male	3.50				
Female	3.62				
Total	3.56				



programme groups (TCI:  $\bar{X} = 3.55$  and ACI:  $\bar{X} = 3.43$ ) whose scores were significantly different from the FSL programme group ( $\bar{X} = 2.22$ ) without being statistically different from each other.

When all groups are considered, the Immersion programme groups (TCI:  $\bar{X} = 3.55$  and ACI:  $\bar{X} = 3.43$ ) are significantly different from the leaders (FC:  $\bar{X} = 5.00$ ) as well as the low-scoring FSL programme group ( $\bar{X} = 2.22$ ).

In the case of the anglophone groups, it will be seen (Table 24B) that IQ has an insignificant effect upon pronunciation ability, there being minimal difference in achievement between the average and high IQ ranges.

There were no significant interaction effects for either group.

c) Grammar

Analyses of the Grammar dimension show the same significant differences between Programme groups as noted in the other dimensions of this evaluation (See Tables 26A and 27A).

In the all-group analysis (Table 27B) the Immersion programme groups (TCI  $\bar{X} = 3.34$  and ACI  $\bar{X} = 3.16$ ) are statistically different from the FC group ( $\bar{X} = 5.00$ ) and the FSL group ( $\bar{X} = 1.86$ ) without showing significant

TABLE 26A

Summary of the Analysis of Variance on  
the Test de Production Orale--Grammar

(Anglophone groups)

(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	19.28	24.74	.001
IQ	2	.84	.34	.76
Sex	1	.31	.26	.61
<u>Interaction Effects:</u>				
Programme x IQ	4	.03	.04	.99
Programme x Sex	2	1.39	1.83	.17
IQ x Sex	2	.35	.46	.64
Programme x IQ x Sex	4	.69	.90	.53
Experimental Error:	74	.76		

TABLE 26B

Summary of the Mean Scores by IQ on  
the Test de Production Orale--Grammar

(Anglophone groups)

(Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	3.50	3.38	1.98	2.95	2.87
Average IQ	3.58	3.39	2.00	2.99	2.85
Low IQ	3.05	2.86	1.67	2.58	2.67
Total	3.38	3.21	1.88		2.81
TK	3.45	3.16	1.86		

TABLE 27A

Summary of the Analysis of Variance on  
the Test de Production Orale--Grammar

(All Groups)

(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	49.03	83.41	.001
Sex of Student	1	.61	.34	.56
<u>Interaction Effects:</u>				
Programme x Sex	3	1.09	1.92*	.13
Experimental Error:	114	.57		

TABLE 27B

Summary of the Mean Scores by Sex on  
the Test de Production Orale--Grammar

(All Groups)

(Scale 1-5)

	TCI	ACI	FSL	FC	Total
Female	3.78	3.13	1.93	5.00	3.46
Male	3.06	3.26	1.93	5.00	3.31
Total	3.42	3.20	1.93	5.00	3.34
TK	3.34	3.16	1.86	5.00	
<u>Sex - Tukey :</u>					
Male	3.28				
Female	3.42				
Total	3.34				

difference between each other. The same statistical effects are apparent in the anglophone analysis, minus the significant difference with the FC group.

The analysis by sex (Table 27B) did not indicate any significant difference in achievement.

There were no interaction effects.

d) Vocabulary

The results of the analyses of the Vocabulary dimension continue to show the same significant Programme differences as previously noted in this part of the evaluation. (See Tables 28A and 28B)

In the all-group analysis immersion programme groups (TCI  $\bar{X}$  = 3.40 and ACI  $\bar{X}$  = 3.16) are significantly different from the highest scorers (FC  $\bar{X}$  = 5.00) and the lowest (FSL  $\bar{X}$  = 1.81) without being statistically different from each other. (See Table 29B)

These significant differences remain in the anglophone analysis, minus of course the significant difference between the FC programme group and the two immersion groups. An interaction effect between Programme Sex of Student, significant at the .02 level, is indicated in the analysis of all groups. This may be accounted for by the fact that ACI males scored higher than ACI females,

TABLE 28A

Summary of the Analysis of Variance on  
the Test de Production Orale -- Vocabulary

(Anglophone groups)  
(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	21.58	26.04	.001
IQ	2	.23	.17	.84
Sex	1	.76	.59	.44
<u>Interaction Effects:</u>				
Programme x IQ	4	.10	.13	.97
Programme x Sex	2	2.18	2.81	.06
IQ x Sex	2	.29	.28	.69
Programme x IQ x Sex	4	.32	.41	.80
Experimental Error:	74	.78		

TABLE 28B

Summary of the Mean Scores by IQ on  
the Test de Production Orale -- Vocabulary

(Anglophone groups)  
(Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	3.60	3.25	2.00	2.95	2.89
Average IQ	3.75	3.32	1.83	2.97	2.80
Low IQ	3.20	2.99	1.33	2.51	2.71
Total	3.52	3.19	1.72	2.81	
TK	3.40	3.16	1.81		

TABLE 29A

Summary of the Analysis of Variance on  
the Test de Production Orale--Vocabulary

(All Groups)  
(Scale 1-5)

Source of Variation	df.	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	50.56	80.89	.001
Sex of Student	1	1.87	.59	.44
<u>Interaction Effects:</u>				
Programme x Sex	3	1.87	3.38	.02
Experimental Error:	114	.55		

TABLE 29B

Summary of the Mean Scores by Sex on  
the Test de Production Orale--Vocabulary

(All Groups)  
(Scale 1-5)

	TCI	ACI	FSL	FC	Total
Female	4.00	3.07	1.93	5.00	3.28
Male	3.06	3.26	1.79	5.00	3.50
Total	3.53	3.17	1.86	5.00	3.35
TK	3.40	3.16	1.81	5.00	
<u>Sex - Tukey :</u>					
Male		3.26			
Female		3.45			
Total		3.35			

while in all other programme groups boys and girls scored either similarly. (FC  $\bar{X}$  = 5.00 both groups) or the females scored higher than the males (See Figure 12).

e) Communication

The results of the Communication dimension continue the pattern already established, showing significant difference among Programmes. (See Tables 30A and 31A)

Both immersion programme groups (TCI:  $\bar{X}$  = 4.09 and ACI:  $\bar{X}$  = 3.90) are significantly different from both the highest group (FC:  $\bar{X}$  = 5.00) and the lowest (FSL:  $\bar{X}$  = 2.59) in the all-group analysis (See Table 31B).

The results follow the same order and significance in the anglophone analysis, minus the results of the FC programme group (See Table 30B).

There were no other significant main effects.

Interaction effects in both analyses are noted with respect to Programme x Sex of Student. In both cases, this appears to be due to ACI males attaining higher scores than females, where the reverse is true in all other groups.

(See Figure 13)

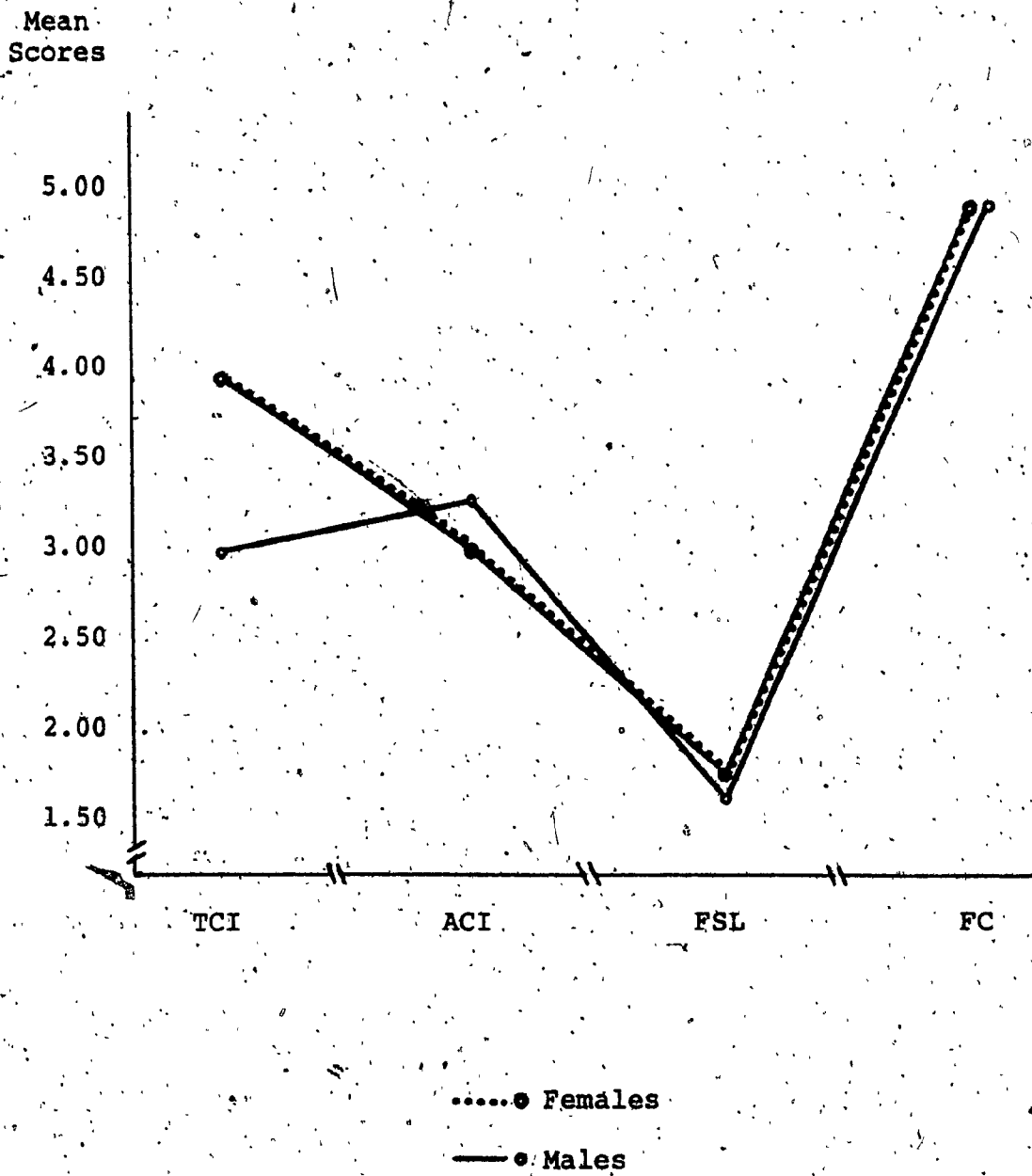


FIGURE 12. Programme x Sex interaction analysis on the Test de Production Orale-Vocabulary (all groups)



TABLE 30A

Summary of the Analysis of Variance on  
the Test de Production Orale--Communication  
(Anglophone groups)  
(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	2	19.68	25.40	.001
IQ	2	.74	.37	.74
Sex	1	.001	.001	.98
<u>Interaction Effects:</u>				
Programme x IQ	4	.37	.52	.73
Programme x Sex	2	4.24	5.99	.004
IQ x Sex	2	.29	.41	.67
Programme x IQ x Sex	4	1.19	1.68	.16
Experimental Error:	74	.71		

TABLE 30B

Summary of the Mean Scores by IQ on  
the Test de Production Orale--Communication  
(Anglophone groups)  
(Scale 1-5)

	TCI	ACI	FSL	Total	TK
High IQ	4.20	4.06	2.82	3.69	3.66
Average IQ	4.33	4.29	2.58	3.73	3.48
Low IQ	4.20	3.75	2.00	3.32	3.46
Total	4.24	4.03	2.47	3.54	
TK	4.09	3.90	2.59		

TABLE 31A

Summary of the Analysis of Variance on  
the Test de Production Orale--Communication

(All Groups)  
(Scale 1-5)

Source of Variation	df	Mean Square	F Ratio	Significance Level
<u>Main Effects:</u>				
Programme	3	29.12	49.83	.001
Sex of Student	1	.05	.04	.85
<u>Interaction Effects:</u>				
Programme x Sex	3	2.74	5.00	.003
Experimental Error:	114	.55		

TABLE 31B

Summary of the Mean Scores by Sex on  
the Test de Production Orale--Communication

(All Groups)  
(Scale 1-5)

	TCI	ACI	FSL	FC	Total
Female	4.69	3.66	2.60	5.00	3.99
Male	3.75	4.16	2.64	5.00	3.89
Total	4.22	3.91	2.62	5.00	3.90
TK	4.09	3.90	2.59	5.00	
<u>Sex - Tukey :</u>					
Male		3.88			
Female		<u>3.92</u>			
Total		3.90			

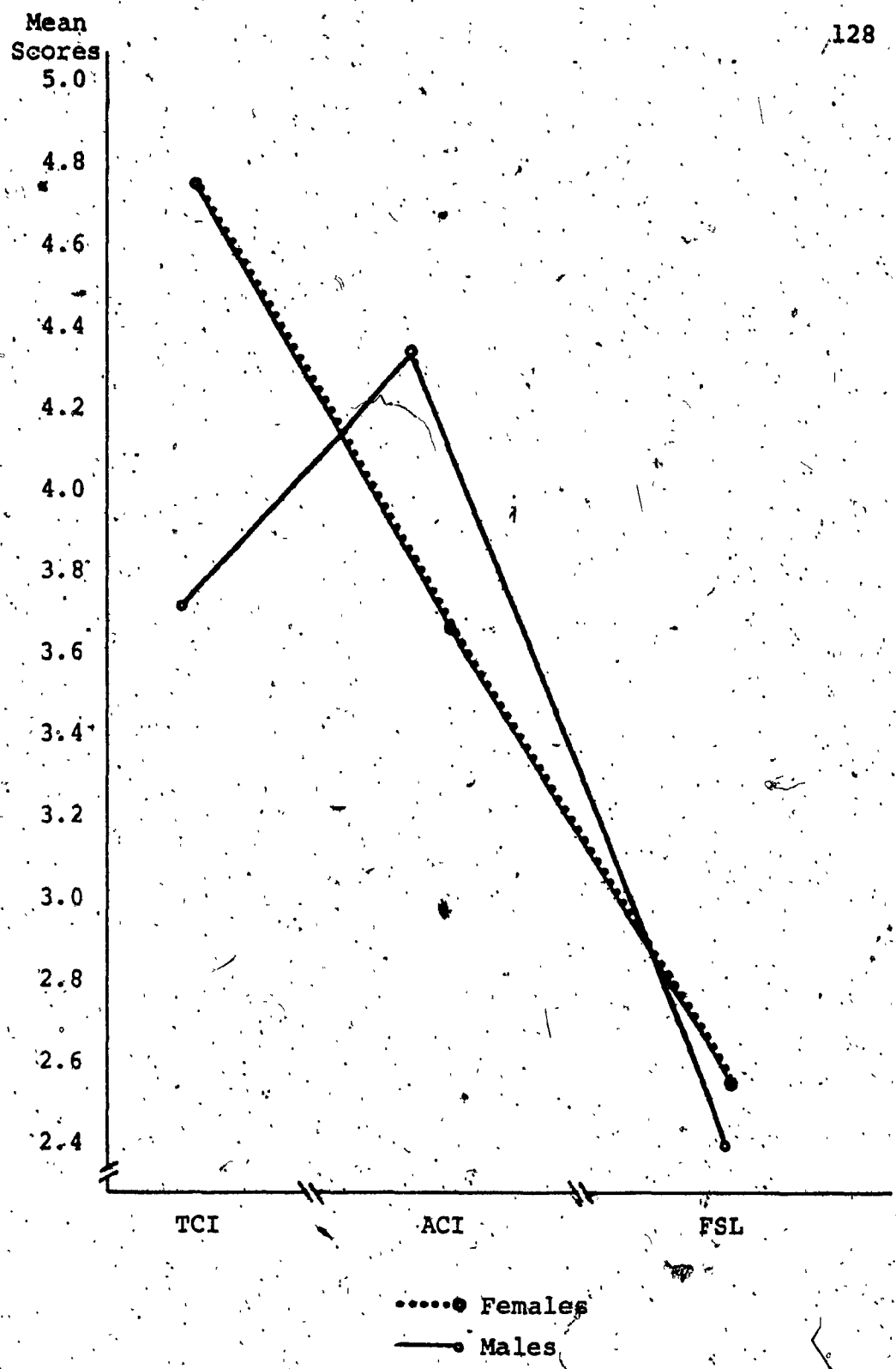


FIGURE 13. Programme x Sex interaction analysis on the Test de Production Orale--Communication.

SUMMARY OF THE RESULTS ON THE  
FRENCH LANGUAGE TESTS

There were significant main effects due to Programme in all of the French language tests administered. In the case of the Test de Production Orale, results of the FC programme group proved to be significantly better than all other groups. This was to be expected, since the FC programme group served to establish the norm against which the conversation of anglophone groups was measured.

In the Test de Compréhension Orale, the difference between the TCI and FC programme groups was not significant.

In the written Comprehension subtest of the Test de Lecture "California", it is interesting to note that the TCI programme group scored higher than the FC programme group, although the difference was not statistically significant.

In the anglophone analysis, immersion groups scored statistically higher than the FSL group in all French-language tests.

In both subtests of the written Test de Lecture "California" all groups scored significantly differently from each other. In the remaining French-language tests, the scores of the two immersion groups were not

statistically different from each other. This result is important in view of the fact that the ACI group spent approximately 13½ hours per week in their immersion programme while the TCI group spent approximately 21½ hours per week in theirs.

Females achieved significantly higher scores in the Test de Rendement en Français, the Test de Compréhension Orale, and the Comprehension subtest of the written Test de Lecture "California". Since these tests all demonstrate retrieval of previously assimilated language data, one might conjecture that girls are better at this skill than boys. However, these findings would need to be replicated before any such theory could seriously be considered.

IQ was an important factor in the results of four tests:

Test de Rendement en Français

Test de Rendement en Mathématiques

Test de Lecture "California": Vocabulary  
subtest, Comprehension subtest

In all cases, students from the high and average IQ groupings (the difference between them not being statistically different) scored significantly higher than the low IQ range. These tests are academically oriented, and generally speaking, students in the higher IQ range achieve best results on this

type of test.

Since IQ scores are not available for the FC programme group, the use of stanines in the Test de Rendement en Français permits a comparison of the performance of the anglophone groups to that of Grade V francophone students in schools of the CECM for the year 1974-75. The TCI programme group, with an average stanine of 4.50, is performing at a level comparable to the bottom stanine of the average portion of the Grade V francophone class, while the ACI programme group, with an average of 3.68 is performing at a level comparable to the top stanine of the below average portion of the Grade V francophone class. The FSL group is comparable to the bottom stanine of the below average portion of the Grade V francophone class.

With regard to the Test de Rendement en Mathématiques, on which the immersion groups scored within the average range of the stanine scale, the ACI score deserves particular attention, since students in two of the ACI schools had not studied Math in French as part of their curriculum. This finding will be further referred to in the discussion section.

IQ proved to be important, not in the usual formula of "High IQ equals successful learning", but rather in the

puzzling discovery that students of average IQ achieved most successfully in all dimensions of the Test de Production Orale, except for Pronunciation, where the difference between them and the leaders was minimal. The differences were not statistically significant but are nevertheless interesting, since they replicate findings by Genesee, Morin and Allister, (1974, 1975) and Genesee and Chaplin (1975) to the effect that success in oral aspects of a second-language is not associated with high intelligence levels.

This phenomenon of high achievement by average or low IQ students is repeated in the Test de Compréhension Orale, in which there is no significant difference among IQ groupings, and in fact, the low IQ students in both immersion groups scored higher than the average IQ students.

If Programmes are analyzed according to the performance of IQ groupings, it will be seen that the high IQ groupings in the FSL programme scored highest on the Pronunciation, Vocabulary and Communication subtests, and the average IQ grouping scored highest on the Comprehension and Grammar subtests. In the immersion programmes, average IQ students scored higher than the high IQ grouping on four of the five subtests of the Test de Production Orale. (The high IQ grouping scored highest on the Pronunciation subtest.)

From these statistics, it would seem that average and below average IQ students learn to speak French as a second language more readily in an immersion situation than in a regular French-as-a-second-language programme.

### C. ATTITUDE QUESTIONNAIRE

Not all students answered all questions on the questionnaire. The percentages reported below are therefore based on the total number of students who answered each particular question.

Table 32 presents student responses to the question of how happy the student was during his school year in the ACI programme, on a scale of generally very happy (1) to generally very unhappy (5). Of the 92 percent who felt positive, 14 percent chose the extreme end of the scale (very, very happy), 39 percent each considered they were very happy or moderately happy. Approximately 8 percent felt they had been moderately unhappy.

As can be seen from Tables 33 and 34, 62.5% of the students felt that taking the French Immersion course had meant more work for them, but in spite of this, 87.5% were glad they had opted for the programme. Only 7.8% were not glad they had spent the year in French Immersion. 18.75% felt that the work load was the same as in a regular grade VII class, and 12.5% considered they had less work.



TABLE 32

PERCENTAGE OF STUDENTS  
HAPPY-UNHAPPY WITH ACI PROGRAMME

	(happy)					(unhappy)				
	1	2	3	4	5	1	2	3	4	5
n	64	25	25	25	25	9	25	25	25	25
Percentages	14.0%	39.0%	39.0%	39.0%	39.0%	14.0%	39.0%	39.0%	7.8%	-

TABLE 33

STUDENTS' PERCEPTION OF WORK  
INVOLVED IN AN ACI PROGRAMME

Students	<u>Work involved</u>			don't know
	more	same	less	
<u>n</u> = 64	40	12	8	4
Percentages	62.5%	18.7%	12.5%	6.25%

TABLE 34

PERCENTAGE OF STUDENTS  
GLAD TO HAVE TAKEN ACI PROGRAMME

Students	<u>Glad</u>		don't know
	yes	no	
<u>n</u> = 64	56	5	3
Percentages	87.5%	7.8%	4.6%

A total of 6.25% were unable to judge whether the course meant more work, and 4.5% could not decide whether or not they were glad to have been in the class.

In response to the request following Question 3:

"If you answered 'YES', why are you glad?  
If you answered 'NO', please give your reasons."

61 students commented on their reasons for answering as they did. The largest number (43%) felt that they had learned a lot more French, while 16% felt that the French they were learning was going to help them in high school or university studies, or eventually in getting a better job. Many students gave more than one reason for their choice. These included 10% who considered it was "good" to know two languages so they could communicate with other people, and 10% who had enjoyed the year and had made new friends (whether French-speaking or English-speaking was not specified.)

Among those who answered "No", the reasons given varied from not benefitting from the class (two because the course was too easy, and two because it was too hard), and one who felt there was too much homework, didn't like the teacher, and didn't like Math in French.

Sixty students responded to question 4.

- "a) If you had a younger brother or sister who was going into grade VII next September, would you advise him or her to take French Immersion?"
- "b) If you had a younger brother or sister who was going to start school next September, would you advise him or her to take French Immersion in Kindergarten?"

Seventy percent of the students would advise a younger sibling to take the Grade VII French Immersion programme. Five percent would not advise a sibling to enter the Grade VII French Immersion programme, and 25% did not commit themselves, answering that they didn't know. Comments regarding those entering this programme ranged from taking into consideration the teacher, how good a student already was in French (three comments) and his emotional attitude.

However, these students did not favour entering a French Kindergarten to the same extent, being very close to evenly divided in their opinion (See Table 35). Approximately 10% answered "don't know" with regard to entering the Kindergarten level French Immersion programme. In their comments, freely given, some students felt it was important for Kindergarten-aged children to learn to speak English properly, and some mentioned that small children may not even speak English articulately when they start school.

TABLE 35

NUMBER AND PERCENTAGE OF STUDENTS WHO  
ADVISE ENTRY INTO A FRENCH IMMERSION PROGRAMME  
AT KINDERGARTEN AND GRADE VII LEVEL.

Students	Grade VII level			Kindergarten level		
	yes	no	don't know	yes	no	don't know
n=60	31	3	15			
n=61				30	25	6
Percentages	70%	5%	25%	49.1%	40.9%	9.8%

Question 5 concerns reasons for having chosen French Immersion. Ten reasons are given and the student is asked to rate each in terms of how important it was for his decision to take the French Immersion programme. He is asked to use "1" as a very important reason and "10" as not at all important. If two or more reasons are equally important, he may give them the same rating. Space is also given so that the student may add reasons which have not been mentioned.

Students from all schools unanimously agreed that French Immersion would help them to get a better job when they finished school. See Table 36 for a summary of the ratings. Closely tied to this reason was #10 to the effect that it would be necessary to speak French if one lived in Montreal. Of interest is the high rating given the knowledge of a language for the student's own benefit (#4) and the place given to the possibility of freer travel in foreign countries<sup>3</sup> (#5). While instrumental (Lambert, 1972) reasons are given the most weight, integrative ones also figure prominently.<sup>3</sup>

The notions that taking the French Immersion programme

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<sup>3</sup>Lambert defines instrumental as the practical or economic advantages of learning a second language, and integrative as the interpersonal gratifications which might result from having skill in a second language.

TABLE 36

STUDENTS' REASONS FOR TAKING THE FRENCH IMMERSION PROGRAMME

Rank Order (1-10)

	Average Rating
1. Better teachers and courses	9
2. Better job	1
3. Be with friends	5
4. Know second language	3
5. Travel	4
6. Make Fr. Can. friends	6
7. Parents' decision	7
8. French-Canadian culture	8
9. Expected to because of grades	0
10. Necessary to speak French in Montreal	2

meant having better teachers and that one was expected to enter the programme if, one had good grades were rated as irrelevant. Little importance seemed to be placed on making French Canadian friends or on being able to benefit from francophone culture. Item #3 (friends in the French Immersion course) was considered of relatively little importance as was pressure from parents (#7).

Additional reasons for having chosen the French Immersion programme ranged from the novelty of a change from regular classes to student concern that they might not have another chance to learn French in an intensive study situation. Other students took the programme because it had been recommended by older siblings, while others took the course because they wanted to, they liked French.

Table 37 shows the response to Question 6 which required the subject to indicate (in order of importance) the French skills he most wanted to improve. He was asked to choose first among Reading, Writing and Listening skills, and then among components of Speaking skills: Grammar, Accent, Vocabulary. The students were very much in agreement that writing was the one they most wanted to improve among the choice of reading, writing and listening. They deemed an improvement in vocabulary to be most important in the context of speaking. The students were unanimous in their ranking of the importance of speaking skills: vocabulary,



TABLE 37

STUDENTS' DESIRED IMPROVEMENT  
IN FRENCH SKILLS

Rank order (1-3)

Reading	Writing	Listening
3	1	2
SPEAKING		
Grammar	Accent	Vocabulary
2	3	1

grammar and accent.

Question 7 asked how many French-speaking friends the students had. Most of the students had some (43 out of 61 responses), although the number varied from one to "lots". This question was included to determine the students' extracurricular exposure to the French language.

As shown in Table 38, in answer to Question 8, the students did not have brothers or sisters in the French Immersion programme in elementary school. (Question 8). In a large number of cases, this was because the student was the youngest in the family.

A total of 43 students answered the question asking for recommendations for changes in the course (Question 9). Of these, six wanted no changes made, and their comments ranged from "It's perfect" to "I'm satisfied". Three others seemed to feel that some changes were necessary, but were unable to specify them, and answered "I don't know".

Five students wanted more conversation and more games. Ten students wanted to change or improve the teacher, and these students also wanted less homework. Three students wanted better methods and two asked for more structure.

TABLE 38

NUMBER OF STUDENTS WITH SIBLINGS IN FRENCH IMMERSION CLASSES

Student Responses	N		Brothers	Sisters
	Yes	No		
	9	52	3	6*

\* includes 1 sister in French school

There was no consensus on other recommendations, but several interesting suggestions were made. Some individual comments were:

"If I made a French Immersion programme I would make it for grade 7 and 8, because below that, you need to learn English properly, and then around grade seven, you can start taking a second language. Grade 9 and up, you should get down to hard plain studying so you can get into a good college. Because they are interested in all subjects, not just French."

"I think there should be French Immersion from grade 3 to 11."

"I feel if you wrote at least one composition a week it would even help you more with your grammar."

This student also referred to there being too many exercises on verbs and grammar in the Ici on parle français workbook.

Another student suggested that learning groups be established in the class, so that those who were more advanced would not be held back in their learning.

There was no agreement on subject matter to be taught. Two students wanted less subject matter and three wanted more; four wanted less actual study of language while one wanted more.

SUMMARY OF THE RESULTS OF THE  
ATTITUDE QUESTIONNAIRE

In general, the author is of the opinion that the answers to the questionnaire seem to have been carefully considered and leave the impression of a group of youngsters seriously concerned with their future. They are realistic in accepting responsibility for achieving their goals, as illustrated by their satisfaction at being in the course, in spite of the extra work it entailed. They recommend taking the grade VII French Immersion programme, probably based on their own experience, while offering reasons for their uncertainty for beginning French Immersion at the Kindergarten level.

Their reasons for having decided to take the French Immersion course are pragmatic on the one hand (better job opportunities) and self-developmental ("nice to know a second language for my own sake") on the other.

From the students' point of view, writing appears to be the most important skill to be improved, other than speaking. It is certainly the one in which the measurement of progress can be most readily seen by the student, (e.g., improvement in dictée marks, which involve spelling and grammar; improvement in composition; improvement in correct responses in grammatical exercises) and this may

account for its importance in the students' view.

The choice of Vocabulary as the most important oral skill to improve suggests perhaps that a good accent has already been acquired (ranking only third as it does here) during periods of regular French instruction from Kindergarten to grade VI.

In their recommendations, the students had some thoughtful suggestions to make about the nature of the programme and its implementation.

## CHAPTER IV

### DISCUSSION AND CONCLUSIONS

In the introduction, different methods of teaching French-as-a-second-language were described and some theories of language acquisition were discussed. It was concluded that an immersion programme, i.e., a learning situation in which the second language was used as the medium of communication, seemed most likely to produce fluency in the target language. The purpose of the present research was to evaluate two different approaches to immersion programming: the activity-centred (ACI) and the teacher-centred (TCI).

Based on the Chomskian (1972) analysis of the structure of grammar, the neurophysiological explanation by Belyayev (1963) of the acquisition of language, and the nature of cognitive development according to Piaget (1971) (1976), it was hypothesized that the ACI approach would provide a more fertile environment for acquiring a second language than the TCI approach.

To test the hypothesis, students from the two types of immersion programmes were evaluated in terms of their

French and English language skills. A group of anglophone students who followed a French-as-a-second-language programme served as an English control group (FSL), and a group of francophone students from all-French schools served as a French control (FC). An attitude questionnaire was administered to the ACI group only.

### English Language Tests

Results of both achievement and writing tests show that neither immersion group was falling behind on English language skills (See Table 39). On these tests where there was a significant difference between the ACI and the TCI programme groups, namely in reading and spelling the ACI programme group scored higher. Since the achievement tests administered to the ACI programme group (Metropolitan Achievement Tests) were not identical to those administered to the TCI and FSL programme groups (California Achievement Tests), there exists the possibility that a discrepancy in test materials affected the results. The schools of the ACI programme group are part of the Lakeshore School Board, while schools of the TCI and FSL programme groups are part of the PSBGM, and a different emphasis on curriculum in the English language arts may also account for the difference in results. In addition, the ACI programme group spent approximately 13½ hours per week in English while the TCI programme group spent 3-3/4 hours per week. However, the



TABLE 39

SUMMARY OF MEAN SCORES ON ENGLISH LANGUAGE TEST RESULTS ACCORDING TO PROGRAMME

Tests	TCI	ACI	FSL	Significant Difference
<u>Achievement Tests:</u>				
Vocab.-Word Kwlg (stanines)	6.11	6.32	6.03	IQ ***
Reading-Comprehension (stanines)	5.08	6.22	4.80	Programme *** IQ ***
Spelling (stanines)	5.52	6.49	5.39	Programme *** Sex ***
<u>English Writing Test</u>				
Spelling (1-5)	2.98	3.38	2.97	Programme *
Sent. Accuracy (1-5)	3.00	3.14	2.79	Sex ** IQ ***
Sent. Complexity (1-5)	2.89	2.99	2.69	Sex *** IQ ***
Organization (1-5)	3.04	3.07	2.76	Sex *** IQ ***
Originality (1-5)	2.17	2.12	1.92	Sex ** IQ ***
Overall (1-5)	3.03	2.89	2.72	IQ *** Sex ***

\* P < .05; \*\* P < .01; \*\*\* P < .001

FSL group spent 21½ hours per week of their school time in English. It is difficult, therefore, to draw precise conclusions from these statistics, but since the results tend for the ACI programme group to be high rather than low, it may be inferred that students in ACI immersion classes are doing at least as well as students in the TCI immersion classes and that neither has fallen behind on skills in their native language relative to students in the regular English programme. This replicates findings by Lambert and Tucker (1972), Genesee, Morin and Allister (1974) and Genesee and Chaplin (1975).

IQ was a significant factor in the level of achievement attained in 7 out of the 9 English language tests administered, with the high IQ grouping scoring highest and the low IQ grouping scoring lowest. These data replicate findings by Genesee, Morin and Allister (1974) and Genesee and Chaplin (1975) concerning the effect of IQ on tests of academic language skills.

Sex of student was significant on 6 out of the 9 tests used--females scored statistically higher than males in each case. All of these tests were concerned with aspects of writing skills such as spelling, organization, sentence accuracy and complexity. It is interesting to note that there were no significant differences according to sex of student on reading skills related to vocabulary

and comprehension, and writing skills in terms of originality. One might infer, therefore, that girls are more attentive to detail than boys.

In summary, the results on the tests of English language skills indicate that a year in an immersion programme has had no detrimental effect on students' ability in their native language.

#### French Language Tests

Programme was a significant factor in the results of French language tests, the FSL programme group scoring significantly lower than both immersion programmes on all tests. They were also significantly lower than the FC programme group whenever this comparison was made (See Table 40).

When the two immersion programme groups are compared to the FC programme group, statistically significant differences are seen in the series of tests on Speaking ability. It was to be expected that students after one year in an immersion programme would not speak as well as native speakers. And yet, their performance of just above and below 4 on a scale of 1-5 reflects well on the success of these programmes. The results of the tests of listening and written comprehension failed to show significant differences between the TCI and the FC programme groups,

TABLE 40

SUMMARY OF FRENCH LANGUAGE TEST RESULTS ACCORDING TO PROGRAMME

Tests	TCI	ACI	FSL	FC	Significant Difference
Test de Rendement Fr. (stanines)	4.50	3.68	2.98	-	Programme *** IQ ***
Test de Rendement Math. (stanines)	5.69	5.07	3.92	-	Programme *** IQ ***
Test de Compréhension Orale (mx = 15)	7.95	7.22	5.80	8.35	Programme *** Sex *
Test de Lecture "California": Vocab. (mx = 90)	52.31	47.35	39.58	58.43	Programme *** IQ ***
Compréhension (mx = 29)	21.12	16.45	13.88	19.80	Programme *** IQ ***
Test de Production Orale: Compréhension (1-5)	4.40	4.01	2.62	5.00	Programme ***
Pronunciation (1-5)	3.55	3.43	2.22	5.00	Programme ***
Grammar (1-5)	3.34	3.16	1.86	5.00	Programme ***
Vocabulary (1-5)	3.40	3.16	1.81	5.00	Programme ***
Communication (1-5)	4.09	3.90	2.59	5.00	Programme ***

\* p < .05; \*\* p < .01; \*\*\* p < .001

although the ACI group was significantly lower than both these. These results are very encouraging and would seem to support Piaget's (1972) contention that thought precedes language. In other words, the immersion students are able to understand language before they are able to use it as fluently as native speakers. In the case of the ACI programme group, the shorter length of time they had spent using French as language of communication might have contributed to the fact that their results were lower.

There was a significant difference among all groups on the reading vocabulary test. This might be attributed to a time factor, in that the anglophone students have had far less experience with the French language than the francophones. Both Belyayev (1963) and Piaget (1972) agree that experience is a vital factor in the acquisition and development of language.

The achievement of the immersion students on the test of language usage (Test de Rendement Français) was at the bottom stanine of the average group in the case of the TCI programme group, and the top stanine of the below average group in the case of the ACI programme group. The FSL students scored at the bottom stanine of the below average group of grade V francophones. These results are comparable to testing in previous years by Gènesee, Morin and Allister (1974) and Gènesee and Chaplin (1975).

Students from both immersion programmes achieved at the middle stanine of the average level in the French language mathematics test. The FSL programme group achieved at the top stanine of the below-average level. It should be noted that two of the schools tested in the ACI programme had not studied Math in French, yet these two achieved the highest scores within their group. It has been suggested by Lambert and Tucker (1972) that acquisition of mathematical concepts is not hampered by learning these in a second language. This statement appears to be corroborated by these findings. Furthermore the performance of the two ACI groups who had not studied math in French suggests that a new language can be applied to areas previously unexplored in that language with good results. These results would appear to further support Piaget's theory (1972) that language follows development of logical structures.

By extrapolation, this finding might be considered as the basis for the success of an immersion programme. As children become involved in learning, whether this concerns the making of maple syrup or a map of the industries of Quebec, language assumes its rightful place as a vehicle for learning and communication. As Penfield (1959) stated, language is learned as a by-product of doing something else.

A comparison of the two immersion programme groups reveals significant differences on the reading test and the Test de Rendement en Français in favour of the TCI programme group. There was no statistically significant difference between them on the other tests, i.e., aural comprehension, math, and oral production. This finding is of interest because of the shorter length of time spent by the ACI programme group in French studies.

Possible explanations for this phenomenon are suggested by Piagetian theories of cognitive development. Since most youngsters in grade VII are at some level of the concrete operations stage, in an ACI class they are able to explore topics at their level of understanding and in their own style, since the curriculum has not been pre-set. Piaget (1975) has emphasized the need for the child to operate on his environment so as to re-discover or re-invent because each child builds his own set of meanings from his experiences. Many new experiences are available to the student in the ACI class and these serve to generate language to enable him to communicate with others. Belyayev (1963) concurs with this reasoning when he states that a true knowledge of language can only be acquired through experiences which lead to understanding linguistic concepts.

There is considerable interpersonal interaction in an ACI class and this benefits the student who is learning

a new language by providing greater opportunity to communicate in the second language.

Programme x Sex or IQ x Sex interactions were seen in a number of the statistical analyses performed on French language tests. In all cases, these interactions were caused by higher achievement on the part of males in the ACI programme group. To my knowledge, there are no studies of activity-centred programmes which show a difference between male and female scores. It is interesting to conjecture that the relaxed atmosphere of the ACI class, the greater allowance for physical movement, the encouragement of self-initiated learning, are all more suitable to the twelve-year old boy than the regular routine of a teacher-directed class, to which girls appear to adjust without difficulty.

As expected, IQ proved to be important on the academic types of tests, i.e., those which required recall, understanding of abstract concepts, or written language skills. In these tests, the high IQ grouping scored highest and the low IQ grouping scored lowest.

However, in the aural-oral tests, students of average IQ, and in some cases of below-average IQ, achieved higher scores than the high IQ grouping. This replicated findings by Genesee, Morin and Allister (1974). One possible



explanation for this phenomenon is that the increased contact frequency (Dodson, 1972) in an immersion programme helps in the acquisition of language on the part of average and below average IQ students. Or, the different nature of the immersion class--its prestige and the greater expectations of its students--might be a factor to be considered. Lozanov (1972) mentions these as important in his methodology.

In their book, Pygmalion in the Classroom, Rosenthal and Jacobson (1968) describe an experiment in which teachers expect their students to do well because they are believed to be more intelligent or motivated than students in other classes: the "self-fulfilling prophecy". This may be happening in immersion programmes.

The possibility also exists that the type of work in the immersion classroom does not place undue emphasis on strictly academic performance, particularly of a written nature. The child who has therefore not been as quick at problem-solving or organization of material in the English stream is now on the same footing (working in a second language) as his more intelligent (according to IQ scales) confrère. Perhaps because he is not stigmatized because of previous performance, he is more able to use all his oral faculties to advantage.

On the other hand, it is possible that IQ is not an important factor in acquiring those language skills related to interpersonal communication. Gardner and Lambert (1972) have also suggested that IQ is not the only significant variable in determining second language success. In fact, they found that attitudes and motivation were significantly related to mastery of the second language. As Chomsky (1972) says, all children learn to speak their native language. Even children with physical disabilities which prevent hearing or speaking can do so, given special training. One might speculate that under favourable conditions, all children can learn a second language.

#### Conclusions and Implications for Second Language Learning

The 12-13 year age group appears to be a good one in which to implement an intensive second-language learning programme. These children are at the level of concrete operations and already have had many experiences upon which to build concepts and develop their native language. At this age, they now seem able to undertake learning in a new language in a very efficient manner, acquiring at the same time general knowledge and fluency in the new language. Previous studies which have been undertaken to date (Genesee, Morin and Allister, 1974; Genesee and Chaplin, 1975; Peel County, 1973) confirm this conclusion. Since the nature of the acquisition of language and its place

in cognitive development are not precisely known, further research in these areas is necessary. A recent comparison of students in a one-year immersion programme at the grade VII level to those who had followed a 100% immersion programme from Kindergarten to grade II and a "dilute" immersion from grades III to VII showed a significant difference only on the Test de Rendement en Français (Genesee and Chaplin, 1975). This also would appear to confirm the conclusion that the grade VII age-level is a productive time for second language learning.

Since the results of the ACI programme group were so close to those of the TCI programme group, and the ACI programme was only approximately 60% as long as the TCI programme, it would appear from this study that activity-centred learning is more economical of time than teacher-centred instruction.

The findings that the grade VII level is a fruitful time for second-language learning and that the activity-centred approach is an efficient learning technique have far-reaching implications for personnel and material resources in the school system. For example, it is not always easy to find appropriate course materials for student use, nor well-qualified teachers for this type of programme.

Since ACI programming appears to be an improvement over TCI programming, it would seem reasonable to expect that the activity-centred approach could be applied advantageously to French-as-a-second-language classes in the regular English stream.

The particular success of males in the ACI programme supports this approach, since it is often claimed that it is the boys who are disruptive in French classes.

The advantage of immersion programming for low and average IQ students is apparent from the studies which have considered this variable.

In their responses to the Attitude Questionnaire, ACI students showed a mature commitment to the work involved in an immersion programme. Their happiness during the year may perhaps be attributed to a programme which suited their developmental needs and in which they enjoyed success. The fact that they are of an age where they can make a personal commitment is also, I believe, an important factor in success.

The results of this study raise a number of questions with regard to programmes for second-language learning. It is to be hoped that further research will be carried out on the optimal age and optimal length of time for acquisition of linguistic competence in a second language;

the high achievement of low and average IQ students in oral work in an immersion programme; the effect of the activity-centred approach on learning a second-language; and the nature of the acquisition of a second language and its relationship to cognitive development.

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APPENDIX A

INTERPRETATION OF STANINE SCORES

Stanine - The stanine scale is a simple nine-point scale of standard scores. (The word stanine was derived from Standard NINE-Point Scale). In this scale, raw scores are converted to scores which range from 1 (low) to 9 (high) with a mean of 5 and a standard deviation of 2.

Meaning of Stanine STA Standard Score NINE - Nine Step Scale

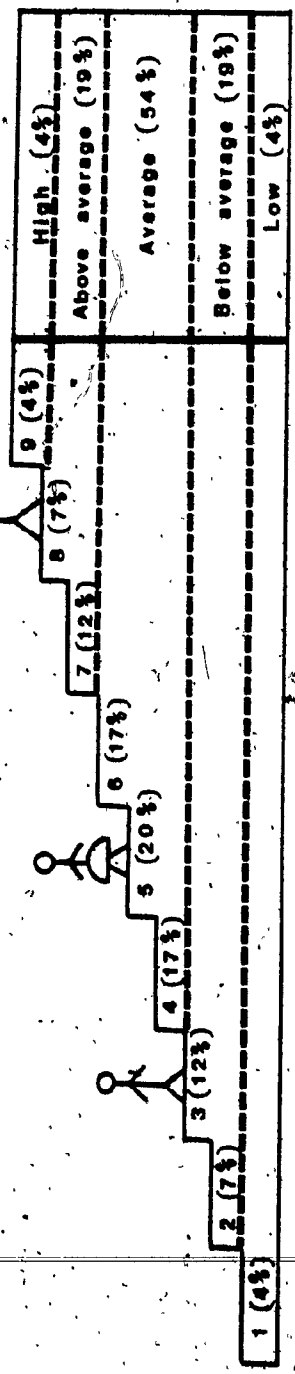


FIGURE 1. Percentage of Cases at Each Stanine Level.

## APPENDIX B.1

NAME: \_\_\_\_\_  
SCHOOL: \_\_\_\_\_  
GRADE: \_\_\_\_\_ FRENCH PROGRAM \_\_\_\_\_

COMPOSITION TOPICS

Choose one of the following:

1. Here I was at last, face to face with my enemy. . . .
2. This must be my unlucky day. . . .
3. This is the story of the meanest person that ever lived. . . .



ENGLISH COMPOSITION

Student code number \_\_\_\_\_

GRADE 7

Marker's Initials \_\_\_\_\_

## (A) SPELLING:

Perfect, no errors ----- 5  
 Three errors or less ----- 4  
 Four, 5 or 6 errors ----- 3  
 Seven or more mistakes ----- 2  
 Unacceptable for a grade 7 students ----- 1

\* PLEASE CIRCLE ERRORS

## (B) PUNCTUATION:

Appropriate \_\_\_\_\_

Inappropriate \_\_\_\_\_

## (C) LENGTH:

Appropriate: fully developed his ideas in appropriate length \_\_\_\_\_

Inappropriate: far too long and rambling \_\_\_\_\_  
 or too short without completing ideas \_\_\_\_\_(D) SENTENCE ACCURACY: grammatical correctness,  
writing in complete, correct sentencesExcellent: consistent use of complete, well-formed  
sentences; no major errors ----- 5

Very Good: some major errors; generally above standard ----- 4

Satisfactory: adequately meets objectives of grade 7 level ----- 3

Below Standard: many major errors; needs work ----- 2

Unacceptable for grade 7 level ----- 1

\* UNDERLINE GRAMMATICAL ERRORS

## (E) SENTENCE COMPLEXITY AND VARIETY:

Excellent: superior use of complex and varied sentence types  
in a meaningful way ----- 5

Better than average use of complex and varied sentence types ----- 4

Complexity and variety of sentence types is adequate for grade 7  
level ----- 3

Overuse of simple sentences: needs work ----- 2

Far below grade 7 level ----- 1

(F) ORGANIZATION: ideas flow smoothly from opening sentence;  
ideas well-developed; use of paragraphing where  
appropriate; story conclusion.

Excellent: outstanding organization ----- 5

Above average: coherent flow of ideas with good ending ----- 4

Meets Grade 7 standards: generally coherent flow of ideas  
with suitable ending ----- 3

Below standard: at times incoherent; no ending ----- 2

Totally inadequate: ----- 1

ENGLISH COMPOSITION page 2

(C) VOCABULARY:

- Superior ----- 3
- Average for expectations of Grade 7 ----- 2
- Below average expectations ----- 1

(H) ORIGINALITY:

- Very imaginative ----- 4
- Above average ----- 3
- Ordinary ----- 2
- Dull and uninteresting ----- 1

(I) OVERALL RATING:

- A - Excellent
- B - Above average
- C - Average
- D - Below average
- E - Unsatisfactory





BUREAU DE L'ÉVALUATION  
SERVICE DES ÉTUDES

TEST DE RENDEMENT EN FRANÇAIS

**No 5**

Ce test s'adresse uniquement aux élèves qui suivent le programme de la cinquième année et qui ont complété au moins la tranche 16 (+ = tranche complétée) sans avoir complété la tranche 20. (- = tranche non complétée)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
															+					-

L'usage du dictionnaire est interdit

Exemples

A Quel mot doit se compléter par la lettre O ?

1	2	3	4	5
un cout	un lavab	un mart	un gât	un bat

Remplace le mot souligné de la phrase ci-dessous par UN AUTRE PLUS PRÉCIS.

1	2	3	4	5
trouver	corriger	oublier	comprendre	effacer

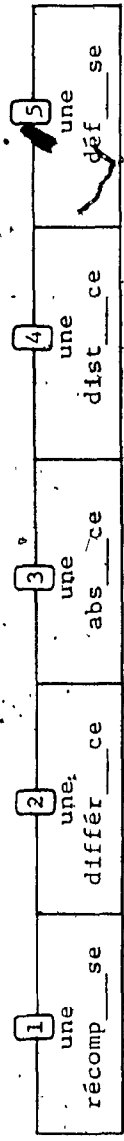
B faire une erreur.

Conjuge le verbe souligné de la phrase ci-dessous au TEMPS DEMANDÉ.

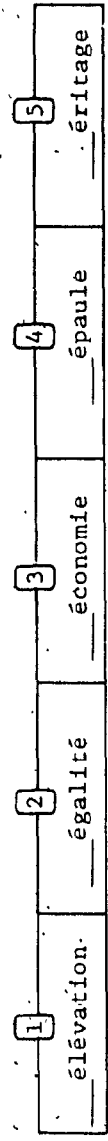
1	2	3	4	5
écoute	écouter	écoutait	écouté	écouterait

C Pierre écouter (présent) un disque.

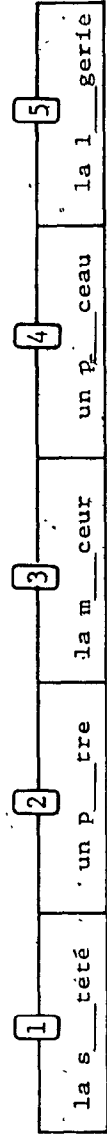
1 Quel mot doit se compléter par les lettres AN ?



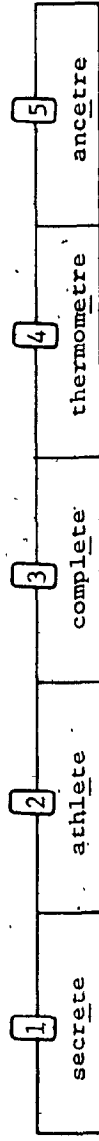
2 Un de ces mots commence par la lettre H. Lequel ?



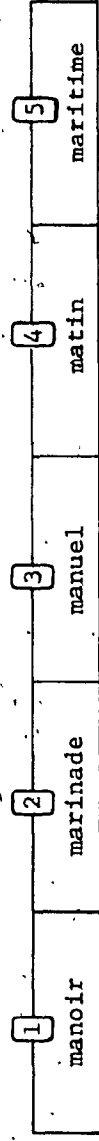
3 Dans quel mot le son IN s'écrit-il EIN ?



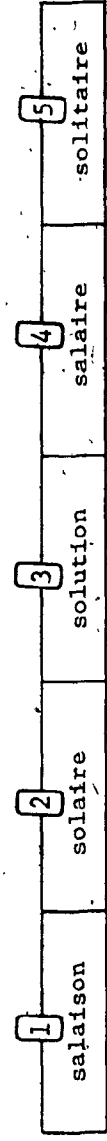
4 Quel mot prend un accent circonflexe (ˆ) sur le E souligné ?



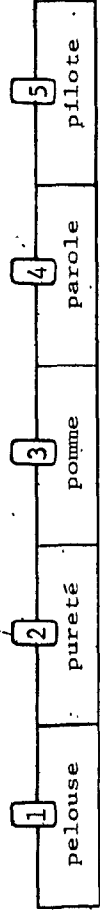
5 Trouve un mot de la MÊME FAMILLE que le mot MARIN.



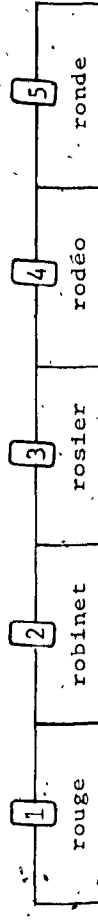
6 Trouve un mot de la MÊME FAMILLE que le mot SOLEIL.



7 Selon l'ordre alphabétique, quel mot viendrait en PREMIER LIEU dans le dictionnaire ?



8 Selon l'ordre alphabétique, quel mot viendrait en DERNIER LIEU dans le dictionnaire ?



9. Dans quel mot TE se prononce-t-il différemment des autres?
10. Dans quel mot IL se prononce-t-il différemment des autres?
11. Dans quel mot CH se prononce-t-il différemment des autres?

1	2	3	4	5
partie	garantie	sortie	inertie	modestie

1	2	3	4	5
profil	outil	pétil	avril	civil

1	2	3	4	5
chopine	chômage	chorale	chose	chocolat

Lis chacune des phrases ci-dessous et trouve le SENS du mot souligné.

12. Faute de temps nous devons décliner votre aimable invitation.
13. Nous prévoyons deux étapes au cours de notre voyage afin de nous reposer.
14. La pêche est prohibée dans ce lac et vous paierez une amende si vous y tendez votre ligne.
15. Grâce à un stratagème, mon frère a réussi à pénétrer gratuitement sur le terrain de l'exposition.

1	2	3	4	5
adresser	refuser	transmettre	accepter	recevoir

1	2	3	4	5
visites	routes	rencontres	réparations	arrêts

1	2	3	4	5
excellente	intérite	populaire	permise	facile

1	2	3	4	5
un congé	son billet	une ruse	la foule	son âge

Trouve la NATURE (sorte de mots) de chacun des mots soulignés.

16. A mon arrivée à la maison, je lui téléphonerai.
17. Ce vieillard marche lentement à l'aide de sa canne.
18. Plusieurs élèves s'apportent une pomme pour la récréation.

1	2	3	4	5
un adverbe	un nom	un article	un pronom	un adjectif

1	2	3	4	5
un adverbe	un nom	un article	un pronom	un adjectif

1	2	3	4	5
un verbe	un adjectif	un nom	un pronom	un adverbe

Complète chacune des phrases ci-dessous par LE MOT QUI CONVIENT.

- 19 Il joue bien au hockey ? sa petite taille.
- |       |          |      |        |       |
|-------|----------|------|--------|-------|
| 1     | 2        | 3    | 4      | 5     |
| selon | pourtant | sans | malgré | comme |
- 20 Ne vous réfugiez pas sous un arbre ? un orage électrique.
- |      |       |         |       |      |
|------|-------|---------|-------|------|
| 1    | 2     | 3       | 4     | 5    |
| vers | après | pendant | quand | avec |
- 21 Il a plu beaucoup, ? les récoltes s'annoncent quand même bonnes.
- |           |     |         |        |        |
|-----------|-----|---------|--------|--------|
| 1         | 2   | 3       | 4      | 5      |
| toutefois | car | puisque | encore | durant |
- 22 L'ours se retire dans sa tanière ? la durée de l'hiver.
- |      |       |      |      |       |
|------|-------|------|------|-------|
| 1    | 2     | 3    | 4    | 5     |
| pour | avant | vers | avec | selon |
- 23 As-tu fini la lecture du livre ? tu m'as passé ?
- |      |         |     |      |       |
|------|---------|-----|------|-------|
| 1    | 2       | 3   | 4    | 5     |
| dont | ensuite | que | donc | comme |

→ Trouve un ANTONYME (un mot qui veut dire le contraire) pour chacun des mots soulignés.

- 24 Le chauffeur accélère la vitesse de son bolide.
- |          |           |         |         |          |
|----------|-----------|---------|---------|----------|
| 1        | 2         | 3       | 4       | 5        |
| ralentit | maintient | indique | observe | poursuit |
- 25 Pierre s'est infligé une blessure profonde.
- |          |               |          |            |         |
|----------|---------------|----------|------------|---------|
| 1        | 2             | 3        | 4          | 5       |
| sérieuse | superficielle | physique | douleuruse | infecte |

Trouve un SYNONYME (un mot qui veut dire à peu près la même chose) pour chacun des mots soulignés.

26) Votre conduite héroïque vous a mérité les félicitations des citoyens.

1	2	3	4	5
critiques	commentaires	louanges	jugements	réclamations

27) Nous avons trouvé cette vieille chaise chez un antiquaire.

1	2	3	4	5
avons déniché	avons rénové	avons remis	avons échangé	avons exposé

28) votre présence à la réunion sera nécessaire.

1	2	3	4	5
plaisante	superflue	inutile	consolante	requise

Pour chacune des phrases ci-dessous change le mot souligné par un AUTRE PLUS JOLI, PLUS PRÉCIS.

29) faire la liste des élèves qui iront en excursion.

1	2	3	4	5
afficher	choisir	ajouter	dresser	permettre

30) Au centre de la ville se trouvent de nombreuses constructions élevées.

1	2	3	4	5
se tiennent	se balancent	se croisent	se montent	se dressent

31) Son dernier saut fut une chose remarquable qui lui valut une médaille d'or.

1	2	3	4	5
un produit	un compte	un exploit	un exercice	un exemple

32) Elle avait vêtu sa veste de sécurité; cela la sauva d'une noyade certaine.

1	2	3	4	5
précaution	cette habileté	cette attitude	cette manoeuvre	cette importance

Les phrases ci-dessous sont en désordre. Dans ta tête, replace-les dans un ordre logique et trouve celle qui serait

33

la première.

- |   |  |
|---|--|
| 1 | Mon tour arrive enfin.                         |
| 2 | Je me présente et j'attends quelques instants. |
| 3 | La visite ne fut pas trop désagréable.         |
| 4 | J'ai un rendez-vous chez le dentiste.          |
| 5 | Il me fait deux obturations.                   |

34

la troisième.

- |   |   |
|---|---|
| 1 | Il remet d'abord le livre qu'il avait emprunté. |
| 2 | Puis il s'en cherche un nouveau.                |
| 3 | Paul se rend à la bibliothèque.                 |
| 4 | Il aura de la lecture pour une semaine.         |
| 5 | Il choisit un roman policier.                   |

35

la dernière.

- |   |                               |
|---|-------------------------------|
| 1 | C'est ma cousine qui m'écrit. |
| 2 | Le facteur sonne à la porte.  |
| 3 | Je m'empresse de la lire.     |
| 4 | Je lui répondrai bientôt.     |
| 5 | Il me remet une lettre.       |

36

la deuxième.

- |   |                                     |
|---|-------------------------------------|
| 1 | L'orage diminue d'intensité.        |
| 2 | Un arc-en-ciel se dessine au loin.  |
| 3 | La pluie commence à tomber.         |
| 4 | De sombres nuages approchent.       |
| 5 | Le tonnerre accompagne les éclairs. |

Conjuge les verbes ci-dessous aux temps demandés.

37 Tel que prévu, nous ÊTRE (futur simple) à 1 heure.

1	étions	2	avons été	3	serions	4	soyons	5	serons
---	--------	---	-----------	---	---------	---	--------	---	--------

38 La pluie TOMBER (imparfait) au moment de partir.

1	tombera	2	tomberait	3	tombaît	4	tombe	5	a tombe
---	---------	---	-----------	---	---------	---	-------	---	---------

Trouve la DEUXIÈME PARTIE (la suite) de chacune des phrases ci-dessous.

39

Cette lettre est pleine de fautes, il faut . . .

- |   |              |
|---|--------------|
| 1 | la signer.   |
| 2 | la poster.   |
| 3 | la dater.    |
| 4 | la corriger. |
| 5 | la plier.    |

40

La cigarette est nuisible à la santé, il faut donc . . .

- |   |                                      |
|---|--------------------------------------|
| 1 | refuser toute viande fumée.          |
| 2 | choisir une autre mauvaise habitude. |
| 3 | vider les cendriers chaque jour.     |
| 4 | prévenir toute cause de feu.         |
| 5 | s'abstenir de fumer.                 |

41

Le pain que tu viens d'acheter est moisi.

- |   |                                    |
|---|------------------------------------|
| 1 | nous le mangerons en rôties.       |
| 2 | dépose-le dans le réfrigérateur.   |
| 3 | il servira à faire des sandwiches. |
| 4 | heureusement qu'il est tranché !   |
| 5 | retourne à l'épicerie l'échanger.  |

42

A cause de la pluie, nous avons dû . . .

- |   |  |
|---|--|
| 1 | porter des vêtements plus chauds.          |
| 2 | écouter les bulletins météorologiques.     |
| 3 | organiser une fête en plein air.           |
| 4 | cesser nos travaux de peinture extérieure. |
| 5 | oublier d'apporter notre parapluie.        |

43

Si tu dois employer l'adjectif LÉGER au féminin, que diras-tu ?

- |   |          |   |        |   |        |   |         |   |        |
|---|----------|---|--------|---|--------|---|---------|---|--------|
| 1 | légèreté | 2 | légale | 3 | légère | 4 | légende | 5 | légion |
|---|----------|---|--------|---|--------|---|---------|---|--------|

44

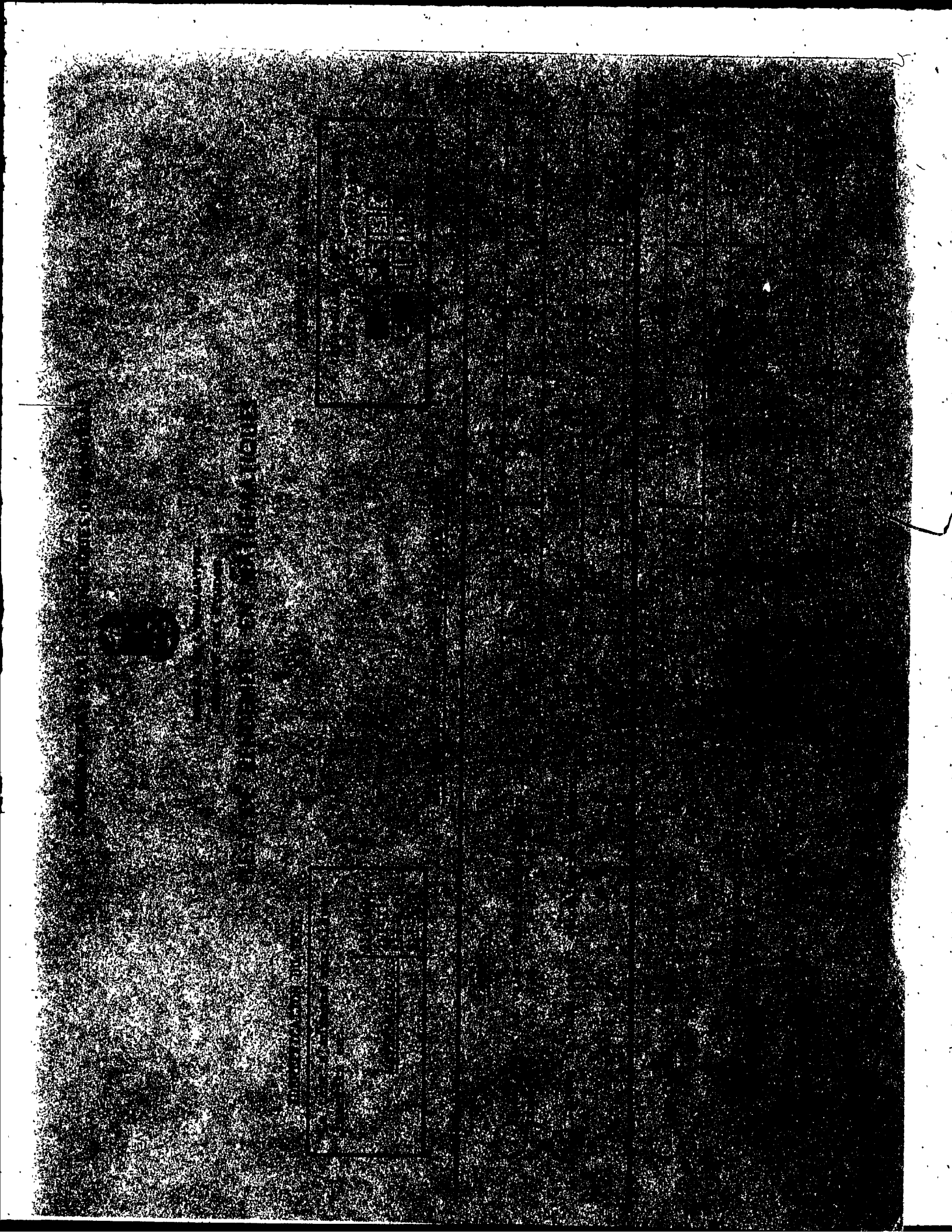
Si tu dois employer l'adjectif ACTIF au féminin, que diras-tu ?

- |   |      |   |        |   |        |   |         |   |       |
|---|------|---|--------|---|--------|---|---------|---|-------|
| 1 | acte | 2 | active | 3 | action | 4 | actrice | 5 | actée |
|---|------|---|--------|---|--------|---|---------|---|-------|

Trouve un adjectif qui s'écrit de LA MÊME FAÇON au masculin et au féminin (il ne change pas).

45

- |   |         |   |      |   |       |   |          |   |        |
|---|---------|---|------|---|-------|---|----------|---|--------|
| 1 | moderne | 2 | doux | 3 | blanc | 4 | maternal | 5 | joyeux |
|---|---------|---|------|---|-------|---|----------|---|--------|





4) Lequel des ensembles suivants contient tous les facteurs du nombre 72 ?

A	B	C	D	E
{3, 9}	{1, 3, 9}	{3, 9, 27}	{1, 3, 9, 27}	

5) Quel est le produit des deux nombres suivants ?

A	B	C	D	E
36	42	48	54	63

6) Quel est le produit des deux nombres suivants ?

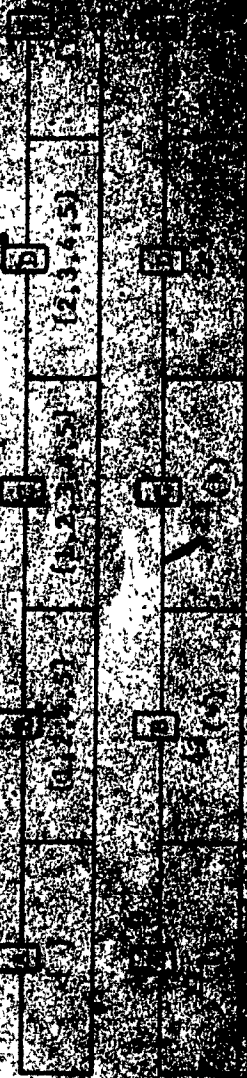
A	B	C	D	E
$\frac{21}{9}$	7	$\frac{60}{175}$	$\frac{75}{140}$	$\frac{50}{70}$

7) Lequel des ensembles suivants peut remplacer le carré noir ?

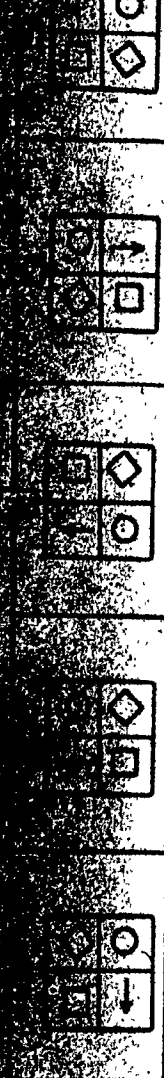
A	B	C	D	E
$\frac{21}{49}$	$\frac{35}{49}$	$\frac{49}{21}$	$\frac{49}{35}$	$\frac{35}{21}$



1  
 2  
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dans la liste des aiguilles d'un cadran, tu obtiens...

## APPENDIX E

TRANSCRIPT OF TAPE FOR  
TEST DE COMPREHENSION ORALE

Vous allez entendre l'extrait d'un texte qui a déjà été diffusé à Radio Canada. Un voyageur a traversé le Canada et il décrit ses impressions de son pays. Le passage suivant s'agit d'un village en Gaspésie. Écoutez bien le texte. Ensuite vous allez entendre une partie du texte suivie de deux phrases. Si la phrase A est correcte, marquez celle-là sur votre feuille de réponses. Si la phrase B est la bonne, marquez celle-là sur votre feuille de réponses. Et si A et B sont toutes les deux bonnes, marquez C sur votre feuille de réponses.

## VILLAGE QUI PORTE BIEN SON NOM

Ce village me semble typique de tant d'autres que j'ai vus sur la côte nord-est de Gaspé. Il s'appelle "Gros Morne". Tout le tourisme de l'été y passe, sans s'y arrêter. Pas un restaurant, pas d'hôtel, ni motel, seulement des cabanes, une grosse église et une école. Il y a bien une maison de planches noircies, dont la façade s'orne des éternelles affiches Purity Flour, Seven-Up, Coca-Cola. C'est chez Langlois. J'ai décidé d'en y arrêter. Nous sommes dimanche matin après la messe. La rue est pleine d'adultes et d'enfants, de beaux enfants,

qui descendent du petit promontoire où l'on a juché l'église. Je trouverai chez Langlois plusieurs jeunes gens et quelques adultes. On y vient volontiers bavarder après la messe, ou en soirée. On y achète ses cigarettes, on y boit une limonade, ou bien l'on se contente de commenter les dernières nouvelles. Ou mieux encore, l'on ne commente rien du tout, on garde le silence. On s'assied sur l'un des bancs de bois adossés aux murs, et l'on contemple la mer. Ou bien l'on écoute Langlois. Il a toujours quelque chose à dire, Langlois. Il a déjà vécu dans les grandes villes, il est au courant d'un tas de choses, il croyait bien ne jamais revenir dans sa place natale, et puis, misère pour misère, il a préféré celle qui lui redonnerait la mer, la forêt, la pêche, l'origanal, le chevreuil, les lièvres. "Pauvre, mais libre" comme il se définit. Libre de crever, et je ne dramatise pas. Il en est ici qui ne mangent pas leurs trois repas par jour. Et il faut voir de quoi se compose leur menu. Bien sûr, vous trouverez de nombreux autres villages encore plus désolés en allant vers l'intérieur. Et ici, tout le monde a la possibilité d'étudier. A Gros-Morne, l'école vous mène à la septième année.

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Ce village me semble typique de tant d'autres que j'ai vus sur la côte nord-est de Gaspé. Il s'appelle "Gros Morne". Tout le tourisme de l'été y passe, sans s'y arrêter.

1. A. Gros Morne ressemble à tout autre village de la Gaspésie.  
B. Ce village est unique en Gaspésie.  
C. A et B.
2. A. Gros Morne se trouve à la montagne.  
B. Gros Morne est situé au bord de la mer.  
C. A et B.
3. A. Il n'y a jamais de touristes à Gros Morne pendant l'été.  
B. Des touristes séjournent souvent à Gros Morne pendant l'été.  
C. A et B.

Pas un restaurant, pas d'hôtel, ni motel, seulement des cabanes, une grosse église et une école. Il y a bien une maison de planches noircies, dont la façade s'orne des éternelles affiches Purity Flour, Seven-Up, Coca-Cola.

4. A. Gros Morne est un village en expansion.  
B. Il s'agit d'un petit village tranquille.  
C. A et B.

C'est chez Langlois. J'ai décidé de m'y arrêter. Nous sommes dimanche matin après la messe. La rue est pleine d'adultes et d'enfants, de beaux enfants, qui descendent du petit promontoir où l'on a juché l'église.

5. A. La scène se passe un dimanche à la sortie de l'église.  
B. La scène se passe le lundi de Pâques.  
C. A et B.
6. A. Il y a beaucoup de monde dans la rue.  
B. La rue est déserte.  
C. A et B.

Je trouverai chez Langlois plusieurs jeunes gens et quelques adultes. On y vient volontiers bavarder après la messe, ou en soirée. On y achète ses cigarettes, on y boit une limonade, ou bien l'on se contente de commenter les dernières nouvelles. Ou mieux encore, l'on ne commente rien du tout, on garde le silence.

7. A. Les jeunes gens se rendent chez Langlois pour faire leurs petits achats.  
B. Les jeunes gens se rendent chez Langlois pour causer de politique ou d'autre chose.  
C. A et B.

On s'assied sur l'un des bancs de bois adossés aux murs, et l'on contemple la mer. Ou bien l'on écoute Langlois.

8. A. Chez Langlois on s'installe dans des fauteuils confortables pour causer.  
B. Les bancs durs accueillent les clients chez Langlois.

C. A et B.

9. A. De chez Langlois on peut voir la montagne.

B. De chez Langlois on peut contempler la mer.

C. A et B.

Il a toujours quelque chose à dire, Langlois. Il a déjà vécu dans les grandes villes, il est au courant d'un tas de choses, il croyait bien ne jamais revenir dans sa place natale, et puis, misère pour misère, il a préféré celle qui lui redonnerait la mer, la forêt, la pêche, l'orignal, le chevreuil, les lièvres.

10. A. Langlois mène souvent la discussion parce qu'il est au courant de beaucoup de choses.

B. Il a vécu longtemps en ville et alors sait discuter de beaucoup de choses.

C. A et B.

11. A. Il préfère la ville à misère de Gros Morne.

B. Il préfère la misère à Gros Morne à la vie de la ville.

C. A et B.

"Pauvre, mais libre" comme il se définit. Libre de crever, et je ne dramatise pas. Il en est ici qui ne mangent pas leurs trois repas par jour. Et il faut voir de quoi se compose leur menu.



12. A. Il y a des familles qui crèvent de faim à Gros Morne.
- B. Il y a des familles à Gros Morne qui n'ont pas assez de nourriture pour trois repas par jour.
- C. A et B.

Bien sûr vous trouverez de nombreux autres villages encore plus désolés en allant vers l'intérieur. Et ici, tout le monde a la possibilité d'étudier. A Gros-Morne, l'école vous mène à la septième année.

13. A. Gros Morne est le village le plus pauvre de la Gaspésie.
- B. Il y a des villages plus désolés que Gros Morne.
- C. A et B.
14. A. A Gros Morne l'école s'arrête aux classes élémentaires.
- B. A Gros Morne tout le monde va au collège.
- C. A et B.

**TEST de LECTURE « CALIFORNIA »**

GRADE 7

Adaptation française du CALIFORNIA READING TEST  
réalisée par A. DEHANT au Laboratoire de Pédagogie  
expérimentale de l'Université de Louvain sous la direction  
du professeur A. GILLE.

---

Nom : \_\_\_\_\_

Prénom : \_\_\_\_\_

École : \_\_\_\_\_

Année : \_\_\_\_\_

Programme : \_\_\_\_\_

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**EDITEST**

94, rue Général Capiaumont

Bruxelles 4

**INSTRUCTIONS** Écrivez à l'endroit réservé à cet usage le chiffre du mot qui signifie le contraire du premier mot.

**EXEMPLE**

large      1 riche      2 étroit      3 dispersé      4 loin

2
---

**TEST 1 — SECTION A**

1 addition	1 victoire	2 révision	3 soustraction	4 marteau	<input type="text"/>	1
2 inconnue	1 négligé	2 propriété	3 connue	4 caisse	<input type="text"/>	2
3 additionner	1 à propos	2 maison	3 parfois	4 soustraire	<input type="text"/>	3
4 fraction	1 perroquet	2 pagaie	3 spacieux	4 entier	<input type="text"/>	4
5 pair	1 rapide	2 impair	3 promis	4 régulier	<input type="text"/>	5
6 entier	1 décimal	2 élection	3 contraire	4 périr	<input type="text"/>	6
7 sécante	1 cercle	2 enchanter	3 parlement	4 tangente	<input type="text"/>	7
8 tout	1 rubrique	2 partie	3 doux	4 abaisser	<input type="text"/>	8
9 créancier	1 méridien	2 cher	3 débiteur	4 pâte	<input type="text"/>	9
10 concave	1 défaut	2 convexe	3 discrétion	4 caramel	<input type="text"/>	10
11 scalène	1 manigance	2 absence	3 équilatéral	4 amitié	<input type="text"/>	11
12 monôme	1 automne	2 polynôme	3 villa	4 modèle	<input type="text"/>	12
13 base	1 surface	2 diagonale	3 hauteur	4 contenu	<input type="text"/>	13
14 premier	1 divisible	2 scandale	3 compter	4 rogner	<input type="text"/>	14
15 irrégulier	1 échouer	2 hymne	3 contenance	4 constant	<input type="text"/>	15
16 majoration	1 réduction	2 effacer	3 estomper	4 dividende	<input type="text"/>	16
17 gros	1 corail	2 attribuer	3 floconneux	4 détail	<input type="text"/>	17
18 diviser	1 binôme	2 réduire	3 doubler	4 augmenter	<input type="text"/>	18
19 recette	1 dépenses	2 gain	3 rapport	4 responsable	<input type="text"/>	19
20 racine	1 publier	2 charge	3 niveau	4 puissance	<input type="text"/>	20
21 théorème	1 coffre	2 ballon	3 postulat	4 hypothèse	<input type="text"/>	21
22 ensemble	1 transport	2 élément	3 natif	4 trésor	<input type="text"/>	22

Total de la section A

**STOP! Maintenant, attendez les instructions suivantes**

**INSTRUCTIONS** Écrivez à l'endroit réservé à cet usage le chiffre du mot qui signifie le contraire du premier mot.

Exemple :

large

1 riche

2 étroit

3 disparu

4 loin

2

**TEST 1 — SECTION B**

1 fontaine	1 permis	2 humain	3 congeler	4 au-delà	
2 printemps	1 matière	2 automne	3 ruisseau	4 année	
3 agitation	1 tranquillité	2 minute	3 processus	4 convoquer	
4 faner	1 manque	2 optique	3 ponctuel	4 fleurir	
5 protozoaire	1 solution	2 calme	3 métazoaire	4 récent	
6 centrifuge	1 augmenter	2 accidentel	3 étendre	4 centripète	
7 restreindre	1 coteau	2 développer	3 ceinture	4 fougère	
8 mouvement	1 fédération	2 affinité	3 repos	4 ailleurs	
9 métal	1 insigne	2 métalloïde	3 vallée	4 aliéné	
10 contracter	1 emballage	2 lit	3 dilater	4 scintiller	
11 protéger	1 excentrique	2 agenda	3 détruire	4 encrasser	
12 stérile	1 peluche	2 fertile	3 souffler	4 mineur	
13 transparent	1 châle	2 opaque	3 studieux	4 inclinaison	
14 fertile	1 germe	2 réservoir	3 stérile	4 séparer	
15 conserver	1 crépiter	2 identifier	3 portier	4 utiliser	
16 fusion	1 indigo	2 congélation	3 frénésie	4 chevron	
17 isoler	1 colonial	2 néant	3 aromatiser	4 grouper	
18 commun	1 original	2 cannelle	3 aggraver	4 comtesse	
19 constant	1 attaque	2 degré	3 variable	4 bourrer	
20 alternatif	1 continu	2 minute	3 processus	4 indigné	
21 noyau	1 régression	2 moyenne	3 protoplasme	4 reprise	
22 mutation	1 réduction	2 agraire	3 situation	4 cogitation	
23 analyse	1 écouter	2 concret	3 amalgame	4 synthèse	

Total de la section B \_\_\_\_\_

**STOP! Maintenant, attendez les instructions suivantes**

**INSTRUCTIONS** Écrivez à l'endroit réservé à cet usage le chiffre du mot qui signifie le contraire du premier mot.

**EXEMPLE :**

large

1 riche

2 étroit

3 disparu

4 loin

2

**TEST 1 — SECTION C**

1 guerre	1 paix	2 certain	3 rideau	4 nombre		1
2 ennemi	1 allié	2 intérêt	3 tempête	4 pratique		2
3 patron	1 hypothèque	2 employé	3 scander	4 plume		3
4 intérieur	1 rage	2 dédain	3 relater	4 extérieur		4
5 liberté	1 départ	2 fortune	3 exemple	4 esclavage		5
6 captivité	1 gloire	2 liberté	3 manufacture	4 étalon		6
7 conquête	1 défaite	2 tension	3 salaire	4 processus		7
8 honnête	1 activité	2 frauduleux	3 priorité	4 indifférent		8
9 monarchie	1 pente	2 république	3 opération	4 divin		9
10 formation	1 répandre	2 dissolution	3 ride	4 thème		10
11 dictature	1 émoi	2 ensemble	3 parlement	4 parti		11
12 accuser	1 désir	2 indulgence	3 défendre	4 précurseur		12
13 opposant	1 sac	2 radical	3 tenancier	4 assistant		13
14 interdiction	1 mignon	2 tolérance	3 réduction	4 phosphore		14
15 descendance	1 scénario	2 ascension	3 ancêtre	4 volontaire		15
16 neutralité	1 feuille	2 partialité	3 mode	4 hérédité		16
17 défaite	1 contenance	2 délivrance	3 victoire	4 festival		17
18 ordre	1 esprit	2 augmenter	3 anarchie	4 évolution		18
19 trêve	1 boiter	2 mouche	3 guerre	4 économique		19
20 licence	1 censure	2 décadence	3 plus	4 cire		20
21 corruption	1 intégrité	2 humilité	3 cravate	4 tapageur		21
22 licite	1 néant	2 cote	3 illégal	4 réprouber		22
23 ordonné	1 connection	2 agréer	3 poutre	4 chaotique		23

Total de la section C \_\_\_\_\_

**STOP! Maintenant, attendez les instructions suivantes**

**INSTRUCTIONS** Écrivez à l'endroit réservé à cet usage le chiffre du mot qui signifie le contraire du premier mot.

**EXEMPLE :**

large      1 riche      2 étroit      3 disparu      4 loin

2

**TEST 1 — SECTION D**

1 présent	1 absent	2 lait	3 nombre	4 front	1
2 direct	1 effrayé	2 bruyant	3 indirect	4 sale	2
3 compliqué	1 efficience	2 argile	3 simple	4 délicat	3
4 accord	1 écriture	2 discorde	3 cert	4 tinter	4
5 convaincre	1 réunir	2 moral	3 dissuader	4 libre	5
6 hypocrisie	1 cuisine	2 gronder	3 joyeux	4 franchise	6
7 raidir	1 assouplir	2 plage	3 équerre	4 masculin	7
8 définitif	1 indulgent	2 avaler	3 provisoire	4 escorte	8
9 invalide	1 addition	2 instruction	3 mérite	4 valable	9
10 abîme	1 chute	2 forcer	3 réduire	4 cime	10
11 cause	1 effet	2 ensemble	3 certain	4 froid	11
12 initial	1 creuser	2 terminal	3 munir	4 tourbillon	12
13 union	1 arrivée	2 grouper	3 moyenne	4 discorde	13
14 dévoiler	1 filial	2 meunier	3 sorcellerie	4 déguiser	14
15 final	1 original	2 attraper	3 farine	4 établir	15
16 estime	1 ton	2 facteur	3 coupable	4 blâme	16
17 déférence	1 pain	2 dédain	3 philosophe	4 munir	17
18 combattre	1 standard	2 avaler	3 assister	4 troupeau	18
19 figuré	1 loin	2 unité	3 propre	4 ceinture	19
20 complexe	1 simple	2 figure	3 assuré	4 noyer	20
21 stable	1 étourdi	2 mouvant	3 caravane	4 concret	21
22 critique	1 infester	2 accouplement	3 attirer	4 élève	22

Total de la section D \_\_\_\_\_

**STOP! Maintenant, attendez les instructions suivantes**

**INSTRUCTIONS**

Lisez les instructions suivantes. Indiquez, comme on vous le dit, le chiffre ou la lettre de chaque réponse correcte dans le carré au bout de la ligne.

**TEST 2 - SECTION E**

- 1 Trouvez le nom de l'animal le plus petit et écrivez son chiffre.

1 chat 2 chien 3 rat 4 chèvre

3

- 2 Écrivez la lettre qui doit être ajoutée à maiso pour faire maison.

i a s n

2

- 3 Quelques-uns des chiffres romains et leur valeur sont :

IX = 9 XIX = 19  
XX = 20 XXI = 21

Écrivez la lettre qui est devant le chiffre romain 9.

a) XXI b) IX c) XIX d) XX

3

- 4 Lisez les noms suivants :

Arthur Bertha Marie Achille

Écrivez le chiffre qui désigne la première lettre des noms de garçon.

1 B 2 A 3 M

4

- 5 Le suffixe **esque** peut être ajouté à certains mots pour modifier la signification; tel que roman : romanesque.

Si le suffixe **esque** est ajouté au mot livre, écrivez le chiffre qui dit que le nouveau mot est :

1 romanesque 2 esque  
3 livre 4 livresque

5

- 6 Les mots se terminant avec un E laissent généralement tomber le e devant les suffixes commençant par une voyelle; tel que persévère : persévérance.

Indiquez le chiffre du mot que l'on obtient en ajoutant le suffixe **ance** au mot **assuré**.

1 assuré 2 persévérance  
3 assurance 4 ance

6

- 7 Écrivez le chiffre qui est devant les deux lettres qui doivent être barrées dans le mot **cette** pour faire **cet**.

1 te 2 ce 3 et 4 ct

7

- 8 Écrivez la troisième lettre du dernier mot de cette phrase.

e a r t

8

- 9 Lisez ces chiffres :

6 3 4 8 5 2 1 9

Indiquez la lettre du troisième chiffre à droite de 4.

a) 2 b) 1 c) 9 d) 6

9

- 10 Écrivez le chiffre qui indique le huitième mot de cette phrase.

1 mot 2 dans 3 quatrième  
4 ligne

10

Résultat de la section C

(nombre correct)

**STOP! Maintenant, attendez les instructions suivantes**

## TEST 2 - SECTION G

Lisez cette histoire : Le léopard fait partie de la classe des félins.

La couleur de son corps varie d'après les contrées dans lesquelles il vit. Du haut des branches des arbres, il bondit sur les autres animaux. Il est chassé pour la fourrure qui est utilisée pour la confection de manteaux, de couvertures et comme garniture.

Écrivez comme on vous le dit le chiffre de chaque réponse correcte. Vous pouvez relire le texte pour trouver la réponse.

- 1 Le léopard est :  
1) domestique 2) laid 3) sauvage  1
- 2 Son repère se trouve dans les  
1) forêts 2) déserts 3) villes  2
- 3 Sa fourrure est :  
1) inutile 2) utile 3) laide  3
- 4 Les léopards guettent leur proie en se cachant  
1) sur le sol  
2) près d'une rivière  
3) dans les branches des arbres  4
- 5 Le meilleur titre pour l'histoire ci-dessus est :  
1) les animaux sauvages  
2) le léopard  
3) les chats  5
- 6 La couleur de son corps est :  
1) comme son entourage  
2) claire  
3) toujours d'une seule couleur  6

Continuez avec l'histoire suivante :

Lisez cette histoire :

• Une vaste région située dans le sud de la Belgique est appelée l'Ardenne.

• L'Ardenne jouit d'un climat tempéré et offre des paysages variés. Son relief accidenté est celui d'un haut plateau coupé de vallées sinueuses et profondes. Les sommets sont couronnés de bois de sapins. Il y a certaines parties de cette zone naturelle qui sont peu habitées.

• L'Ardenne est riche en bois et en carrières.

• L'élevage et l'industrie du bois s'y sont développés de façon considérable.

- 7 Le climat de l'Ardenne est :  
1) tempéré  
2) très sec  
3) équatorial  7
- 8 L'histoire ci-dessus concerne :  
1) les régions tempérées  
2) l'Ardenne  
3) de vastes territoires  8
- 9 Choisissez le meilleur énoncé :  
1) l'Ardenne a un climat très sec  
2) l'Ardenne n'a pas d'industrie  
3) l'Ardenne a des parties peu habitées  9
- 10 Le paysage de l'Ardenne est :  
1) presque le même partout  
2) uniforme  
3) d'une grande variété  10
- 11 Les bois de l'Ardenne se trouvent surtout :  
1) dans les vallées  
2) sur les sommets  
3) dans les plaines  11

Continuez à la page suivante



## TEST 2 SECTION G (suite)

Lisez cette histoire :

La production du caoutchouc :

● On trouve des arbres à caoutchouc principalement en Amérique du Sud, aux Indes, en Amérique Centrale et en Afrique.

● Pour obtenir le latex ou sève, on pratique une entaille verticale, circulaire ou diagonale dans l'écorce de l'arbre. Un petit récipient de métal ou d'argile est attaché au tronc de chaque arbre. Tous les soirs, celui qui a fait l'entaille récolte le contenu de ces récipients qui est versé dans des cuves plus grandes.

● Le latex récolté est versé dans des réservoirs contenant un volume d'eau égal à celui du latex. Le caoutchouc se solidifie ou s'épaissit sous l'action de l'acide acétique dilué.

Les morceaux de caoutchouc de forme épaisse et en feuilles pâteuses, subissent plusieurs traitements.

Fondu, lavé et séché, il fournit diverses sortes de feuilles de couleurs et d'élasticité différentes.

Ecrivez le chiffre de chaque réponse correcte. Vous pouvez relire le texte pour trouver la réponse.

12 Le caoutchouc provient de

- 1) mines
- 2) arbres
- 3) argile
- 4) minerais

12

13 Un acide utilisé pour la production du caoutchouc est :

- 1) nitrique
- 2) hydrochlorique
- 3) acétique
- 4) sulfurique

13

Lisez ces 4 titres :

- Récolte du latex
- Mélange du latex et de l'eau
- Épaississement du latex
- Entaille sur les arbres

et suivant l'ordre dans lequel ils se présentent dans l'histoire, répondez aux quatre questions suivantes

14 L'épaississement du latex était :

1<sup>er</sup> 2<sup>e</sup> 3<sup>e</sup> 4<sup>e</sup>

14

15 Mélange du latex avec l'eau était :

1<sup>er</sup> 2<sup>e</sup> 3<sup>e</sup> 4<sup>e</sup>

15

16 L'entaille sur les arbres était :

1<sup>er</sup> 2<sup>e</sup> 3<sup>e</sup> 4<sup>e</sup>

16

17 La récolte du latex était :

1<sup>er</sup> 2<sup>e</sup> 3<sup>e</sup> 4<sup>e</sup>

17

Lisez les six titres suivants. Vous devez choisir celui qui convient le mieux pour chacun des trois paragraphes de l'histoire que vous venez de lire plus haut.

## TITRES

- 1 Les régions.
- 2 Où trouve-t-on des arbres à caoutchouc ?
- 3 La récolte du latex.
- 4 L'entaille sur les arbres.
- 5 Transformation du latex en caoutchouc.
- 6 La coulée dans les cuves.

18 Le meilleur titre pour le premier paragraphe est le chiffre :

1 2 3 4 5

18

19 Le meilleur titre pour le troisième paragraphe est le chiffre :

1 2 3 4 5 6

19

20 Le meilleur titre pour le second paragraphe est le chiffre :

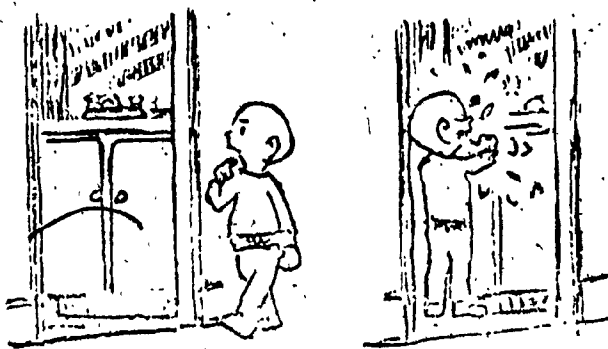
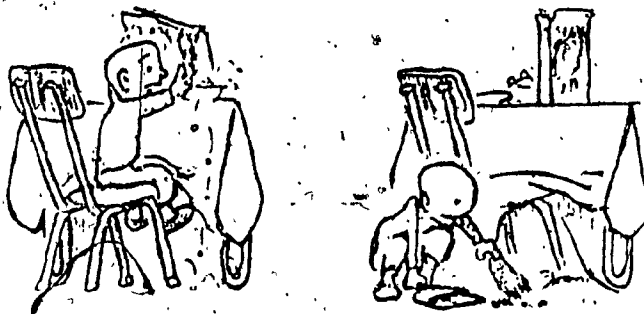
1 2 3 4 5 6

20

Résultat de la section G

(nombre correct)

L'épreuve est terminée. — Fermez votre cahier.



## APPENDIX H

## EVALUATION DE LA PRODUCTION ORALE EN FRANCAIS

PRINTEMPS 1974

INITIALES DU CORRECTEUR \_\_\_\_\_

NOM \_\_\_\_\_

ANNEE \_\_\_\_\_

A) Compréhension générale pendant la conversation

Comprend tout . . . . .	5
Très peu de répétition nécessaire pour la compréhension . . . . .	4
A besoin qu'on répète certaines questions pour bien comprendre . . . . .	3
A besoin que quelques phrases soient traduites en anglais pour comprendre . . . . .	2
A besoin que la plupart des questions soient traduites en anglais pour comprendre . . . . .	1

B) Prononciation

Prononce comme si le français est sa langue maternelle . . . . .	5
Quelques mots sont mal prononcés, mais la communication ne s'en trouve pas affectée . . . . .	4
Prononciation inconsistante, menant parfois à des contresens . . . . .	3
Graves défauts de prononciation. La communication s'en trouve très affectée . . . . .	2
Elocution très difficile à comprendre. Communication gravement affectée . . . . .	1
Ne parle pas assez pour pouvoir être évalué . . . . .	0

C) Grammaire et Syntaxe

Pas d'erreur de grammaire ni de syntaxe. Connaissance convenable de la grammaire et de la syntaxe . . . . .	5
Erreurs grammaticales ou syntaxiques occasionnelles . . . . .	4
De nombreuses erreurs de grammaire et de syntaxe amenant un langage parfois obscur . . . . .	3
Grammaire et syntaxe très insuffisantes. Langage souvent incompréhensible . . . . .	2
Elocution difficile à comprendre. De trop nombreuses erreurs graves . . . . .	1
Ne parle pas assez pour pouvoir être évalué . . . . .	0

D) Vocabulaire

Vocabulaire équivalent à celui d'un francophone de son âge . . . . .	5
Quelques erreurs: En général, vocabulaire suffisant. Rare mot anglais ou anglicismes . . . . .	4
Vocabulaire assez simple, mais quand même suffisant. Parfois un mot anglais ou un anglicisme . . . . .	3
Le mauvais mot trop souvent. Beaucoup de mots anglais et d'anglicismes . . . . .	2
Malentendus à cause de ce manque de vocabulaire . . . . .	1
Vocabulaire insuffisant pour pouvoir s'exprimer . . . . .	1
Ne parle pas assez pour pouvoir être évalué . . . . .	0

E) Communication

Facilité d'expression et désir de communiquer en français: supérieurs . . . . .	5
Facilité d'expression et désir de communiquer en français: au dessus de la moyenne . . . . .	4
Facilité d'expression et désir de communiquer en français: moyens . . . . .	3
Facilité d'expression et désir de communiquer en français: inférieurs à la moyenne . . . . .	2
Refus de s'exprimer en français . . . . .	1

## APPENDIX I

1. How happy were you this year in high school?

generally very \_\_\_\_\_ generally very \_\_\_\_\_  
 happy unhappy

2. Do you think that by taking French Immersion you have made more work for yourself?

YES \_\_\_\_\_

NO--there is about the same  
 amount of work \_\_\_\_\_

NO--there is less work in  
 this program \_\_\_\_\_

I do not know \_\_\_\_\_

3. a) Are you glad that you took the grade 7 French Immersion?

YES \_\_\_\_\_

NO \_\_\_\_\_

I do not know \_\_\_\_\_

If you answered "YES", why are you glad? If you

answered "NO", please give your reasons.

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4. a) If you had a younger brother or sister who was going into grade 7 next September, would you advise him or her to take French Immersion?

YES \_\_\_\_\_

NO \_\_\_\_\_

I do not know \_\_\_\_\_

- b) If you had a younger brother or sister who was going to start school next September, would you advise him or her to take French Immersion in Kindergarten?

YES \_\_\_\_\_

NO \_\_\_\_\_

I do not know \_\_\_\_\_

5. We would like to know why you took French Immersion.

Would you rate each of the following reasons for taking French Immersion in order of importance so that 1 is the reason that you feel was the most important for why you took French Immersion and 10 is the reason which you feel was the least important. If you think two or more of the reasons are equally important give them the same rating. Give a rating of 0 to those reasons which are totally irrelevant.

\_\_\_\_\_ taking the French Immersion program meant that my courses and teachers would be better than if I had taken the English program.

\_\_\_\_\_ because it will help me to get a better job when I am finished with school

\_\_\_\_\_ because most of my friends were also taking French Immersion.

\_\_\_\_\_ because it is nice to know a second language for my own sake.

\_\_\_\_\_ because then I can travel more freely in foreign countries

\_\_\_\_\_ because then I might be able to make friends with some French Canadians.

\_\_\_\_\_ because my parents thought that I should.

\_\_\_\_\_ so that I can go to French movies and watch French television and read French newspapers and books.

\_\_\_\_\_ because if you get good grades in school you are expected to take French Immersion.

\_\_\_\_\_ because in the future it will be necessary to speak French if you want to live in Montreal.

Other reason(s) why I took French Immersion which are not mentioned above:

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6. If you were able to improve your French skills which aspect(s) would you like to improve? Check as many of the following items as you want; if you check more than one, rank them in order of importance with 1 being the one that you would most like to improve, 2 being the second most important aspect to improve, and so on. Again, choose and rank as many as you want.

reading.  
 writing.  
 listening.

and speaking:

grammar.  
 accent.  
 vocabulary.

7. Do you have any French-speaking friends?

YES \_\_\_\_\_

NO \_\_\_\_\_

How many? \_\_\_\_\_

8. Do you have any brothers or sisters who are in French Immersion in elementary school?

YES \_\_\_\_\_

NO \_\_\_\_\_

How many brothers? \_\_\_\_\_

How many sisters? \_\_\_\_\_

9. If you could change the French Immersion program in any way you want, what would you do? Consider the program from grade 7 through to grade 11. Try to be as specific as possible.

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