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CHAPTER ONE

The Research Problem

Introduction

There have been several longitudinal studies of French immersion (FI) language programs of the type found in Montreal, (Bruck et al., 1975; Genesée, 1975; Cohen, 1974; Swain, 1972). The results of these studies suggest that these programs of instruction are successful in maintaining native language skills as well as developing in children the ability to speak, understand and learn in the French language. However, there has been no systematic attention given to the academic characteristics of children who drop out of FI or who do not participate in the FI program for other reasons. These two groups form an English stream in an otherwise French immersion social-educational structure.

There is a popular suggestion in the FI school community that children in the English stream of a FI school are affected negatively by their situation. Since these children do not participate in the more prestigious French immersion program, there is the belief that they receive an inferior quality of schooling. No empirical

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evidence exists to support this suggestion as far as this investigator is aware. This study attempts to shed empirical light on this popular notion by comparing children educated in the English stream of a FI school with children educated in a regular school in which the language of instruction is English and in which there is no French immersion program.

The Learning of French in Quebec

In order to provide the reader with some background for understanding the emphasis and prestige associated with FI schooling in Quebec, a brief discussion of the Quebec cultural setting and the current focus on the learning of French follows.

Cultural situations in which bilingual education exists differ along many dimensions, such as, which language is being introduced as the target language, or, whether or not bilingual education is being requested by a majority or minority group. In the case of minority group request, there may be present an effort to halt an assimilative process - the bilingual education being a response to a real or imagined threat of extinction of a native culture or language. Differences also occur in the degree of political pressure that is applied regarding languages learned and spoken and in terms of openly acknowledged linguistic need. (Mackey, in Allen, 1972)

In Quebec, the various cultural groups have their own desired level of bilingualism or idea of the form that bilingual education should take. The means or type of educational program appropriate to the achievement of bilingualism for one group may be inappropriate or inapplicable to another group. For example, French immersion programs beginning in kindergarten may be successful with upper middle class Anglo-Saxon children, while perhaps not successful with children of poor immigrant families. The bilingual education issue is complex, as is the cultural situation in Quebec.

There are two major language groups in Quebec representing two cultural groups, each of which has, historically, shared both the role of the majority and the role of the minority group. At the present time, the numerical majority, the French, show some characteristics typical of minority groups in its effort to preserve the language and culture against possible loss through assimilation or economic and political domination by the English.

The language of the government has generally been French, but the language of business transaction

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and commerce in general has been English. The French far out-number the English in Quebec. In terms of territorial rights between the French and the English, the French were here first. This fact has had a profound effect on subsequent social history.

Under the terms of the British North America Act of 1867, separate school systems based on religious affiliation were to be provided. The educational system that evolved in Quebec was divided along religious and language lines which resulted in English Catholic and French Catholic school systems, in addition to an English Protestant system. Until recently, there was little systematic effort towards bilingual education in either system. Before the 1960's the English Protestant system, although teaching French as a second language from the early grades, was unconcerned by the fact that its graduates were not functionally bilingual. This situation may have persisted for so long because there was an employment market for the unilingual English student and no real

emphasis on bilingual requirements. In the mid 1960's this began to change and political pressures in the Quebec economy began to focus on bilingual competency. The English community became sensitive to these pressures at about the time that they were openly articulated and efforts to produce bilingual students became more common. Subsequently, parent demand for FI programs has increased continually until at the current time twenty of the elementary schools in the Protestant School Board of Greater Montreal now offer French immersion programs. (PSBGM enrolment lists, 1970-1975)

In schools providing FI from kindergarten through grade six, thirty-five percent of the population of those schools is enrolled in the program. A number of the pupils who start in FI at kindergarten discontinue participation in the program at some point after the first year or two. These children become part of an English stream in a FI school.

Although there is some variation from school to school in the exact organizational structure of the FI program, generally all pupils in the school at the kindergarten level are instructed entirely in the French language. The amount of English instruction

increases after the first grade until by grades five and six about fifty percent of each day is taught in French. English reading instruction is normally delayed until grade two on the theoretical premise that it is best that the reading skills be established first in the second language. There are indications that when this is accomplished; as is expected by about the grade two level, then the attainment of English reading skills comes almost automatically. (Tucker, 1974)

Teachers in the immersion programs behave as if they were monolinguals in the target language and there is no translation made in the classroom. Children who have asked for and received this specialized program of bilingual education are normally native English speaking and of the upper or middle class. Children whose native tongue is French have not been systematically integrated into the program.

Typically, starting at the grade one level, a small English-taught class is formed within the FI school. This stream is composed of children who have dropped out of the FI, as well as of children who entered the school too late to be included in the program. The size of these classes increases over the six years.

of elementary school until they make up approximately one-half of the school population. The FI school selected for this investigation offered no choice regarding language of instruction at the kindergarten level. The alternative English instruction public school was inconveniently located. One may speculate that in the presence of strong negative attitudes on the part of parents, that several conveniently located private schools presented an option, particularly for members of the socio-economic level of the population in this study. Children entering the school at the grade one level did have a choice regarding language of instruction. By grade two only English language instruction was available to newcomers.

The Research Defined

This research is an exploratory study of some personal and background variables (intelligence, academic achievement, frequency of occurrence of learning and behavioural problems, parental attitudes regarding bilingual education and parental educational aspirations) which may differentiate children who are educated in the English stream of a FI school from children who attend a regular school in which the language of instruction is English for all pupils. Data for three groups of subjects, (1) drop outs from FI (2) children who never were in FI and (3) children educated in a non-immersion school were analyzed to

determine if any of these factors are related to their educational situation.

Two groups of children were selected from grades five and six in a FI school. (Appendix A) Group 1 was composed of thirty-one children who had dropped out of FI at some point prior to the grade three level. Group 2 was made up of thirty-two children who had never been in FI, who had entered the school too late to be included in the French program or who had entered at the grade one level and had opted for the English language instruction class. These two groups are separate for this study but in actuality are combined in the same classrooms. A third group, numbering thirty-four children, was selected from a school within the same school board that did not have a FI program. The curriculum of the English classes in the FI school was basically the same as the non-immersion school. Both schools were located in similar neighborhoods.

Intelligence and achievement tests were administered. The parents of the children completed a questionnaire. The teachers rated each child on two scales (Appendix D) for the presence or absence of learning and behaviour problems. The data was coded and programmed using the Statistical Package for the

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Social Sciences (Nie, et al., 1975). Chi square, analysis of variance and t-test were the procedures used in the statistical analysis of the results.

CHAPTER TWOReview of the Literature

A review of the literature yields extensive information on bilingual education programs, language learning, second language learning and on evaluative studies of language immersion programs. Very little literature exists however, on the particular problem this study is attempting to investigate. We can examine the overall theoretical and structural framework of which this study is a part but little or no attention has yet been given to the social-psychological ramifications of several component aspects of bilingual education programs - for example, voluntary or involuntary non-participation in a second language program in a particular school. Factors associated with dropping out of language immersion programs and attitudes surrounding non-participation have not been examined systematically. References to these matters in the literature are nonexistent. In this study hypotheses have been developed from what has been established and reported on bilingual education in general and specifically from findings of evaluative studies of French immersion programs in Montreal. Therefore, the following section presents some background information in order to clarify the problem being examined.

The following discussion will cover (a) bilingualism and bilingual education defined; (b) social-psychological factors in second language learning; (c) evaluative studies of French immersion programs, in an attempt to delineate the problem being studied and the hypotheses developed.

Bilingualism Defined

Bilingualism will be defined here as the ability of a speaker to produce complete and meaningful utterances in a language other than the mother tongue. (Anderson & Boyer, 1970)

There are two basic types of bilingual education programs; those in which the goal is development of equal facility in two languages with a simultaneous appreciation for the values and traditions of both language groups, and secondly, those in which the goal is one of language shift, in which instruction in the mother tongue is used in the early grades for the explicit purpose of easing eventual transition to full use of a second language. The divergent goals of bilingual education programs provide a basis for theoretical controversy and underlie differing pedagogical practices. Much of the literature available has to do with the second type of program - language shift - which type tends to be particular to minority and

immigrant group situations. The goal of most FI programs as developed in Quebec in the last ten years is of the first type mentioned above, although the social structure presents a unique cultural and linguistic situation.

Mackey (Andersson & Boyer, 1970) differentiates type of bilingual education programs along lines of differing curriculum patterns. For example, he asks if the medium of instruction is single or dual and whether there is emphasis on maintenance, development or transfer of language use. Stern (1973) distinguishes between individual or personal bilingualism and institutional bilingualism. He notes the existence of different levels of bilingualism and that awareness of such levels provides direction to education planning by focussing attention on the range of possible goals. Stern feels that bilingual education ought to be structured in terms of the objective - the level of bilingualism desired by one or several parts of the society and in terms of the means or methods with which the objectives can be achieved.

Some researchers (Tucker, 1974) believe that in any community in which there is a need to continue or create a bilingual situation, that priority in education should be given to the language that would

be least likely to develop spontaneously. Stern (1973) states that it is not an impossible paradox to demand protection of French in Quebec and at the same time to develop a bilingual education policy for all. He sees linguistic diversity and the protection and development of one language as potentially supportive of each other. However, he feels that language diversity must be an accepted part of the value system or bilingual education will operate in a social vacuum.

Some Social-Psychological Factors in Second Language Learning

In the literature on second language learning, the focus of discussion varies from the physiological to the social-psychological. In this study we are concerned with the person primarily as a social unit, residing within a rather unique cultural setting and educated in a specific organizational context. In our search for dimensions which might be relevant to children who drop out of a second language learning situation or who do not elect to enter that situation or who are not eligible, we propose to examine factors which have been identified as correlates of second language learning.

Gardner and Lambert (1972) maintain that the successful second language learner must be psychologically

prepared to adopt aspects of behaviour which characterize members of the other linguistic group. Motivation to learn the language is thought to be determined, in part, by attitudes towards the other group and towards foreign people in general and is an important determinant of the student's orientation to the learning task itself. Orientation is said to be "instrumental" if the underlying purpose of learning the language is utilitarian. Orientation is "integrative" if the ultimate desire is to become an accepted member of the other group. The type of orientation developed was found by these authors to be generated in the family, but it was also found that intelligent and linguistically gifted people were more likely to have an integrative type of motivation.

When a population is ethnically diverse as in Quebec, a sense of ethnic affiliation is a noticeable feature of the culture. Frasure et al. (1975) noted that contact with members of a different group is thought to give rise to greater awareness of one's own group membership. In Quebec language is the major determinant of cultural identity for the two major language groups. These authors theorized that when identity is closely tied to language spoken, the possibility that intergroup contact might be 'additive' rather than 'subtractive'

or that one could become comfortably bilingual and bicultural might be disregarded if the person's language is thought to be in a threatened state.

Whether observations such as the above are relevant in the case of young children is open to question. However, since in the early years parents are generally instrumental in the decision process and since motivation to learn is thought to be tied closely to the home environment and the attitudes prevalent there, such views are relevant and worthy of consideration here.

Edwards and Macnamara (1973) found a strikingly positive attitude on the part of students and teachers towards the learning of French in Quebec and towards knowing more about and being part of the French community. They also found that those living outside of the urban area formed a subgroup showing a strong preference for knowing the local form of the French language. This was tentatively interpreted as reflecting the need for ease in communication in a locale in which there was daily contact with members of the other group. The implication here is that this daily contact increased the integrative type of motivation. In Segalowitz's words (1975) they felt a "communicative" need, or in Frasure's words they were looking upon the experience

as an additive one.

None of these studies deal directly with second language learning in young children and although the findings are of particular interest regarding adult attitudes, we must turn to recent evaluative studies of early French immersion programs to shed more light on the subject matter of this study.

Evaluative Studies of French Immersion Programs

Several longitudinal studies have been done on language immersion programs of the type found in Montreal, such as the St. Lambert Project, now past its tenth year (Bruck, Lambert, Tucker, 1973, 1975); the Calver City program (Cohen, 1974) which was patterned after the St. Lambert Project; the Toronto French School (Swain, 1974) and the Ottawa Roman Catholic Separate School Board study by Casserly and Edwards (1973). The results of these studies tend to replicate each other. Some of the major findings of these investigations are summarized below.

(1) Intelligence and aptitude make contributions to second language learning that are independent of motivation and attitude. According to Gardner and Lambert (1972) attitude and motivation are of prime importance in a child's learning of a second language.

(2) There is no empirical evidence to

substantiate fears that FI bilingual education programs have any negative cognitive effects on the learner. Results indicate that there appears to be no confusion or retardation in native language skills in spite of the fact that initial reading takes place in the second language and reading in the child's own language is delayed until the second grade, at which time the skills in the second language are expected to be established. In the evaluative studies it has been found that once reading in French is accomplished there tends to be a very rapid and seemingly automatic transfer of the reading ability to the child's own language. In addition, children in a French immersion program were found to attain achievement scores comparable to children learning the same subjects in their own language. (Tucker, 1974)

(3) There is some evidence to suggest that children who are exposed to more than one language and who are successful in the second language bilingual programs, exhibit greater verbal flexibility and enhanced creative ability than is thought to have been likely to occur without the second language exposure. (Segalowitz, 1975)

The Role of Intelligence in Second Language Learning

Because intelligence is the best known predictor of academic achievement, it will be treated independently in this section of the discussion. Some early studies as reviewed by Genesee (1975) showed bilinguals to perform less well than monolinguals on intelligence tests. However, it is reported that most of the early studies were not well designed and attempted to look at the influence of bilingualism on intelligence rather than the influence of intelligence on second language learning.

Genesee (1975) reports that in 1946 Malherbe found that low intelligent children in bilingual schools performed better on achievement tests than a low I.Q. group in a unilingual school. Dockrell and Brqssear (1967) also found that intelligence was not closely tied to improvement in any of the second language skills. Based on such work, intelligence is thought to be of more importance in formal instruction situations. Polich and Genesee (1975) studied below average intelligence children in both FI and non-immersion programs. The low I.Q. children were found to comprehend as much spoken French as the above average I.Q. students in the FI and the FI children of low I.Q. were no further behind in English language skills than were the low I.Q. children who were not in FI.

To quote Genesee's summary statements:

" (1) Factors other than purely intellectual ones may contribute to successful second language learning.

(2) Students of below average intelligence benefit from participation in bilingual or immersion schools by acquiring second language skills which are superior to those of their peers following regular 'French as a second language' courses.

(3) Below average I.Q. students may be able to master certain aspects of the French language to the same extent as average or above average I.Q. students.

(4) Below average I.Q. students do not suffer any differential native language deficiencies as a result of participation in bilingual or immersion programs."

(Genesee, 1975, p.16)

These findings tend to confirm previous reports by Gardner and Lambert (1972) that intellectual factors are not the most important factors in second language learning, rather attitude and motivation may be equally important. This is most evident when the second language is taught in an informal manner rather than in a highly structured and formal manner.

Several broad generalizations can be drawn from the research done in this field and questions are also raised. It appears that more than one language can be handled by a child in his schooling. In the process of acquiring a second language, intelligence and aptitude are not thought to be as important, particularly for interpersonal fluency, as are motivation and attitude. However, style of teaching - formal versus informal, is thought to be a central element.

A deficit of the studies mentioned above is their lack of information pertaining to children who start in an immersion program, but who, for one reason or another, discontinue participation and continue their schooling in an English-taught class, usually within the same school. Furthermore, it seems from the preceding literature review, in particular with regard to data on intelligence and achievement that the reasons for the formation of a drop out group are not at all clear. Children who have dropped out of FI have not been compared to children in a non-immersion setting, nor has a drop out group been compared to other members of their classes who never took part in the French program.

The evaluative studies on the immersion programs tend to examine the efficacy of the programs as demonstrated by the survivors - children who have received a highly organized, well publicized, thoroughly planned, coordinated, research monitored educational program. One of the major findings of these studies is that there is no evidence of negative cognitive effects on the learner. The possibility that negative effects might occur and result in students leaving the FI has not been examined. In effect, the findings of these studies may not be generalizable to all students who enter FI, only to those who have remained in the program. It is possible that if FI drop outs had been included in the samples of the longitudinal studies that findings might be less consistently positive. The drop out children may eliminate from the data important negative elements worth investigation.

CHAPTER THREEHypotheses

The review of the literature on early French immersion programs suggests that intelligence is not a factor in the successful acquisition of the second language. This finding therefore seems to suggest that intelligence is not a factor in a drop out population. There is no evidence to suggest that intelligence is other than normally distributed amongst children who did not elect for FI or who did not have the opportunity to take part in the program. We can also assume that intelligence is normally distributed in a regular non-immersion school population. Therefore it is hypothesized that no significant difference in I.Q. will be found between the drop out group (Group 1), the group that never participated in FI (Group 2) and the regular non-immersion school children (Group 3).

The literature indicates that FI children achieve in basic skills as well as children in regular non-immersion schools. No empirical evidence was found to support the popular belief that the quality of educational experience and resultant academic performance of children in the English stream is inferior to that of children in the French immersion stream or to that of children in a regular school. It is therefore hypothesized that no significant difference in achievement will be found

between Group 1, Group 2 or Group 3 as measured by the Metropolitan Achievement Reading Comprehension and Mathematics Computation tests.

Since learning problems are typically associated with lower intelligence and/or with lower academic achievement, it is hypothesized that there will be no significant difference in the number of learning problems reported by the teachers for Group 1, Group 2 or Group 3.

Similarly, there was nothing in the literature to indicate that success in the FI programs was in any way dependent upon certain behavioural characteristics. Therefore, it is hypothesized that there will be no significant difference in the number of behavioural problems reported by the teachers between Group 1, Group 2 or Group 3.

It would appear that if a child was placed in a FI program that parental attitudes would have been positive, since the learning of a second language is generally valued amongst highly educated and high socio-economic status parents. There is no evidence to indicate that attitude change results in drop out of children from FI or vice-versa. Again, it could be argued that the parental attitudes of children who did not have the FI option might well be positive, the only differentiating factor being late entry to the school because of mobility reasons. A similar position could

be postulated for the parents in the non-immersion school since community pressure in that neighborhood initiated the introduction of FI in a nearby school shortly after the children in this study began their schooling. It is therefore hypothesized that no significant difference in parental attitudes towards the learning of French will be found among the three groups in this study. It may be found, however, that such factors as length of residence in Quebec, likelihood of a move out of Quebec, do vary attitudes to bilingual education in one direction or another. For example, those who are likely to move from Quebec may indicate a less intense need for their children to become fully bilingual. These hypotheses are presented below in summary statement form:

- (1) There will be no significant difference in intelligence between Group 1 (drop out children from FI), Group 2 (children who never were in FI but are in an FI school) or Group 3 (children who attend a regular non-immersion school).
- (2) There will be no significant difference in achievement between Group 1, Group 2 or Group 3.
- (3) There will be no significant difference in parental attitudes between the three groups regarding:
 - (a) bilingual education for the children in this study.
 - (b) general educational aspirations for these children.

(4) There will be no significant difference in learning problems between Group 1, Group 2, or Group 3 as reported by the teachers on the rating scales.

(5) There will be no significant difference in behaviour problems between the three groups as reported by the teachers.

As stated previously, no study of which this author is aware has investigated a group that has dropped out of FI or compared them with their peers in the same classes who never were in FI or to a group from a non-immersion school in a similar socio-economic neighborhood. This research proposes to look at these three groups in terms of (1) intelligence (2) achievement (3) parental attitudes regarding bilingual education and educational aspirations for their children and (4) teacher rating of learning and behaviour problems.

Table 1 describes the instruments to be used to test the hypotheses and indicates which questions on the parent questionnaire pertain to each of the above variables.

Table 1
Instruments to be Used to Test Hypotheses
by Dependent Variable

	Ravens Progressive Matrices	Metropolitan Achievement Tests: 1&5	Teacher Rating Scales	Parent Questionnaire Item number
• Intelligence	X			34
Achievement		X		2, 3, 13, 14, 23, 27
Learning Problems			X	34
Behaviour Problems			X	34
Parental Attitudes				12, 19, 20, 21, 22, 23, 24, 25, 27

Some General Conceptual Probes

If to receive one's schooling in the English stream in a FI school is to receive an inferior education, then this should be reflected in a series of carefully selected tests probing certain dimensions which have been identified as potentially relevant consequences of being taught in the English stream of a French immersion school. Measures of achievement and intelligence can be obtained and assessed through the administration of standardized tests. Attitudes of teachers towards children in this English stream may be probed through the learning and behaviour rating scales. Parental views of bilingual education and their educational expectations for their children may

be obtained through a carefully constructed questionnaire. Data on personal characteristics of the child and his family which may or may not be relevant to the investigation are also obtainable through the questionnaire. Thus differences in demographic characteristics that might not be known to school administrators, for example, ethnic origins of the parents, language spoken at home, level of schooling of the parents, can be obtained.

Some general questions which this study is attempting to explore are: What are the stated reasons for dropping out of the FI? How do the English stream children compare academically and intellectually to children in a non-immersion school. Is there any particular feature that distinguishes children who drop out from FI? Do the parents of drop out children have the same or different bilingual and educational aspirations for other children in the same family?

CHAPTER FOURResearch Design and ProceduresThe Sample

The sample consisted of ninety-seven subjects selected from grades five and six in two schools belonging to an English-Protestant board in Montreal. Three separate groups were selected.

Group 1 was made up of thirty-one children from grades five and six who had dropped out of French immersion (FI) but who had remained in the same school and become part of the English stream of that school. (Appendix A) Eighty percent of this group entered the school at the kindergarten level, while twenty percent entered at the grade one level. Ninety-five percent had dropped out of the FI by the grade three level.

Group 2 was composed of thirty-two grades five and six children who never were in FI but who attended the same school and classes as Group 1. Eighty-eight percent of the subjects in this group had entered the school at or prior to the grade three level, the remaining twelve percent (four subjects) had been in the school more than two years.

Group 3 was made up of thirty-four subjects, taken from grades five and six in a school that did not offer FI. Of this group seventy-five percent had entered

the school before or by the grade three level.

Group 2 was included in this study in order to differentiate factors specific to being in an English-taught class in a FI setting, from factors associated with drop out from FI. Since recent entry to the English stream from the French could introduce confounding variables such as adjustment to new class-mates, the composition of all groups was, with six exceptions, made up of children who had been in the schools for two or more years or whose drop out from FI had occurred more than two years prior.

The sample was selected from grades five and six because it was felt that any differentiating factors which existed between the groups would have had time to accumulate and the immediate factors associated with drop out from the FI would be eliminated. It was primarily intended that this study examine the experience of being in the English stream in a FI milieu, not a study of reasons for drop out from FI, per se.

Group 1 contained seven grade four children. Their class was a split four/five class and they were included in the sample in order to increase the size of the drop out group. These children's achievement results were eliminated from the analysis because the

achievement test used was not valid for that age and grade. They were, however, included in all other results and analyses.

Of note is the fact that teachers in the FI school were consistently vague regarding which children had or had not been in the French program. Thus school records had to be referred to in order to make up the group lists for this study. This was considered to be a positive feature for the study as it tended to indicate that the children were not pre-identified by the teachers and stereotyped as drop outs or otherwise.

The non-immersion school was rated by the school board as serving a similar population as the school that Groups 1 and 2 were taken from. However, the classes in this school were found to have a large percentage of first generation Greek children who were bussed to school from another neighborhood. These children were eliminated from the sample. At the time of the sample selection it was therefore believed that the demographic profile of the sample groups would be very similar in terms of socio-economic class and ethnic background.

Measurement of Variables

The Ravens Progressive Matrices test was used to test intelligence. (Ravens, 1956) This test is

particularly designed for use with young children. It can be used as a group test and is considered to be relatively language free. Administration and scoring procedures as specified in the manual were followed. Raw scores were converted into standardized percentile points using the tables provided for this in the manual. This was necessary because of the age range of the sample and the fact that the Ravens test does not provide an I.Q. score.

The Metropolitan Achievement Test, Intermediate Battery, Parts One and Five (Reading Comprehension and Mathematics Computation) (Durost, et al., 1970) was used to assess achievement. Administration and scoring procedures as specified in the manual were followed. Because of the two different grade levels present in the sample, the achievement results were analyzed with reference to grade level.

A questionnaire (Appendix B) was developed by the writer to obtain data on certain dimensions believed relevant, such as parental attitudes towards bilingual education and educational aspirations of parents for their children. The questions were designed using the multiple choice format and parents were requested to check one response per question. The first twenty-seven questions were answered by the parents of all three groups

and the last eight questions by the parents of Group 1 only. The questionnaires were taken home by the children and were accompanied by a covering letter (Appendix C). Ninety percent of the questionnaires were returned.

Two rating instruments were developed by the author which required each subject's teacher to rate the child on a seven-point scale for learning problems and for behaviour problems. The scales ran from (1) which represented none to (7) which represented severe. (Appendix D)

Procedures

Meetings were held initially with the principals and teachers of both schools in order to explain the nature and purpose of the study and to discuss procedures. Because of current teacher unrest over contract negotiations, some slight resistance was encountered. For example, in the regular non-immersion school, the investigator was requested to administer the tests to the entire class rather than to the selected subjects within each class, which was done. This may have provided a positive feature for the study since it meant that there was no singling out of specific children for the test situations.

Testing was carried out over a three week period. The non-immersion school group was given the Ravens Progressive Matrices test and the two parts of the

Metropolitan Achievement Test in six different sessions, on three different days. Groups 1 and 2 were also tested over six sessions. These children were taken from their classrooms into space provided for the testing. The test situations themselves, however, provided a mixed group of both drop outs and children who had never been in the French immersion program.

All tests were administered by the investigator. The Ravens Progressive Matrices was always given first. The children enjoyed doing this test and it seemed to help establish a friendly and cooperative atmosphere, especially when it was understood that the tests would have no bearing on their schooling and that the children were assisting in a research project. It was somewhat difficult to handle their curiosity without either appearing too secretive or divulging information which might raise anxieties. One class in the non-immersion group school seemed more concerned than the others about the tests. Similar subjective observations were noted in the cases of the teachers involved with these classes - the teacher of the more anxious class appearing eager to let the investigator know what a good class she had. The other teacher in this school demonstrated a friendly confidence in his students. Nevertheless, it

is believed that a good effort was obtained in all the groups.

The parent questionnaires were given to each child by the investigator at the end of the last test session. Each child was given one-to-one verbal instructions to have the questionnaire filled out that evening and returned to the teacher the following day.

The rating scales were designed to provide an index of teacher attitudes towards children in the English stream of a FI school as compared to attitudes of teachers towards the children in the non-immersion school. As noted earlier, the teachers were not aware of which children were drop outs from the French and which were not. On the rating scales then, the names were listed randomly, by class, and were not identified by group as defined in this study. The teachers were asked to complete these scales quickly, without reference to their records. The intent here was to obtain as subjective an evaluation as possible as a reflection of attitudes.

Statistical Analyses

Frequency distributions were first obtained for each group on each variable as well as for the combined groups, and the data checked for errors. Simple cross -

tabulations of the data were then made using the Statistical Package for the Social Sciences (Nie et al. 1975). The five percent level of significance was taken as the criterion of significance. T-tests and analysis of variance were used on the intelligence and achievement measures.

CHAPTER FIVEResults

This chapter presents the results of this investigation, which attempted to identify factors differentiating children being schooled in an English stream in a French immersion school when compared to those attending a non-French immersion school. The question as to whether or not such differences, if present, pertained primarily to the drop out group from the French immersion was also examined.

Findings will be presented and discussed under the following headings:

1. Demographic characteristics of the sample.
2. Intelligence
3. Achievement
4. Parental Attitudes
5. Teacher ratings of (a) learning problems and (b) behaviour problems.

Demographic Characteristics

At the time of the selection of the three groups to be studied, it was believed that the demographic features of the two schools from which the samples were drawn would be similar, since the schools had been matched in terms of school board socio-economic categorization and children of certain minority immigrant groups had been eliminated from the sample. The non-

immersion school and the French immersion school neighborhoods were similar with regard to type of home, proximity to the downtown area of the city, language spoken and reputed socio-economic level of the residents. Both schools were considered to be serving upper middle class neighborhoods.

The data obtained through the parent questionnaire yielded more specific information on the research sample. The children in the three groups came from homes with a mean number of three children per family. The ages of the children in the sample ranged from nine years four months to thirteen years. Apart from Group 1 which was composed primarily of boys (eighty-four percent) the sex distribution of Group 2 and Group 3 was approximately equal. The fact that in selecting a reasonable sample at precise grade levels of children who had dropped out of FI resulted in a significantly greater proportion of boys, tends to indicate that there may be a sex factor in drop out which could be investigated further. This result supports several findings in other studies that boys are more vulnerable to difficulty in school than are girls. Further characteristics on the composition of the groups is presented in Tables 2 and 3 which follow. Table 2 presents those dimensions for which significant differences were found between the groups while table 3 presents the insignificant dimensions.

Table 2

Significant Demographic Characteristics*

<u>Variable</u>	<u>Group 1</u> %	<u>Group 2</u> %	<u>Group 3</u> %	<u>p</u>
<u>Father's Mother Tongue (8)**</u>				
English	100	97	60	$\chi^2=22.98$
French	0	3	7	df=4
Other	0	0	32	p=.0001
	(N=25)	(N=31)	(N=28)	
<u>Father Raised (11)</u>				
Quebec	48	41	32	$\chi^2=26.7$
Elsewhere in Can.	48	35	14	df=6
An English country	4	19	14	p=.0002
Non Eng. country	0	3	39	
	(N=25)	(N=31)	(N=28)	
<u>Child Lived in Quebec (9)</u>				
All his life	92	38	50	$\chi^2=24.4$
Less than 5 yrs.	0	55	25	df=10
Other	8	7	25	p=.006
	(N=25)	(N=31)	(N=28)	
<u>Mother Raised (10)</u>				
Quebec	64	42	43	$\chi^2=14.8$
Elsewhere in Can.	24	35	18	df=6
An English country	8	19	10	p=.02
Non Eng. country	4	3	28	
	(N=25)	(N=31)	(N=28)	
<u>Mother's Scholting (13)</u>				
Less than univer.	66	35	64	$\chi^2=9.9$
University	33	45	28	df=4
Post University	0	19	7	p=.04
	(N=24)	(N=31)	(N=28)	
<u>Mother's Occupation (15)</u>				
Housewife	54	29	14	$\chi^2=17.9$
Professional	29	54	42	df=10
Other	17	17	44	p=.05
	(N=24)	(N=31)	(N=28)	

* See Appendix E for print out of significant variables covering all categories in the questionnaire on each item.

** Bracketed numbers refer to item number in questionnaire, see Appendix B.

Table 3

Non-Significant Demographic Characteristics

<u>Variable</u>	<u>Group 1</u> (N=25) %	<u>Group 2</u> (N=31) %	<u>Group 3</u> (N=28) %	
<u>Chance of Move</u> <u>From Quebec</u> <u>Within 2 Years (12)*</u>				
Likely	8	38	25	(p=.065)
Unlikely	92	62	75	
<u>Father's</u> <u>Schooling(14)</u>				
Less than Univ.	16	13	28	(p=.75)
University	12	13	18	
Post University	71	74	53	
<u>Father's</u> <u>Occupation(16)</u>				
Professional	54	61	43	(p=.64)
Managerial	37	32	46	
Other	9	7	11	
<u>Child's Language</u> <u>at Home(6)</u>				
English	100	100	85	(p=.078)
Other	0	0	15	
<u>Mother's Mother</u> <u>Tongue(7)</u>				
English	96	90	71	(p=.11)
French	0	3	7	
Other (N=24)	4	6	21	
<u>Child's</u> <u>Position in</u> <u>Family(2)</u>				
First born	25	25	39	(p=.14)
Second born	12	42	32	
Third to sixth born	64	32	27	

*Bracketed numbers refer to questionnaire item number.
See Appendix B.

As can be seen from Table 2, the three groups differed significantly on the following variables: mother tongue of the father; location in which the father was raised; length of time the child had resided in Quebec; location in which the mother was raised; level of schooling and occupation of the mother.

One hundred percent of Group 1 fathers (Table 2) gave English as the mother tongue as did ninety-seven percent of Group 2 fathers. However, only sixty percent of Group 3 fathers gave English as the mother tongue. The mothers (Table 3) showed a similar trend with regard to mother tongue with four percent of Group 1, nine percent of Group 2 and twenty-eight percent of Group 3 mothers stating that their mother tongue was other than English.

Although not unexpected in view of the above findings regarding parents' mother tongue, it is of note that the percentage of fathers brought up in non-English speaking countries moves from zero percent for Group 1 (the drop out group) to three percent for Group 2 to thirty-nine percent for Group 3, ($p=.0002$). The pattern for the mothers was less pronounced. ($p=.02$)

The language spoken at home to the child was English for one hundred percent of both Groups 1 and 2, however, only eighty-five percent of Group 3 stated that English was the language spoken most at home to the child.

This was an unexpected, although insignificant finding, as an effort had been made in the sample selection to eliminate immigrant children.

The three groups were also found to differ significantly in terms of the length of time each had resided in Quebec ($p=.006$). Ninety-two percent of the drop out group had spent all their lives in Quebec, while fifty percent of Group 3 and thirty-eight percent of Group 2 had been in Quebec all their lives. It is interesting to note that the drop out children were all of English speaking parentage and had been in Quebec the longest, had the greatest percentage of parents raised in Quebec who indicated the least likelihood of departing from the Province within two years. The non-immersion school group had the greatest number of parents born in non-English speaking countries and whose mother tongue was other than English.

A significant difference between the groups with regard to schooling levels of the mothers was found ($p=.04$). When those attending university and those having done post graduate work are combined, thirty-three percent of Group 1 mothers went to university whereas sixty-four percent of Group 2 mothers did so. Thirty-four percent of Group 3 mothers were university educated. Group 2 mothers are the most highly educated mothers of any of the groups. These families also

represent those whose children had never been in the French immersion because they had entered the school too late to be permitted entry to the program.

Unfortunately, we do not know how many of those would have selected FI, given the opportunity. The higher level of schooling of mothers in this group could be related to the higher professional status of both the mothers and the fathers of this group and to the higher rate of mobility, as indicated by the number of years children in Group 2 had resided in Quebec and this group's high likelihood of a move from Quebec.

Over eighty percent of both Group 1 and 2 fathers went to university or beyond and seventy-one percent of Group 3 fathers did likewise. Group 3 fathers had the least schooling.

Considering the overall high levels of schooling, especially of Groups 2 and 3, the high number of professional fathers is not surprising. Of interest is the difference on this dimension for the mothers, with fifty-four percent of Group 2 mothers claiming to be professionals, compared to forty-two percent of Group 3 mothers and twenty-nine percent of Group 1 mothers ($p=.05$). Fathers did not differ significantly with regard to occupational positions, although Group 3 has fewer professionals.

Although the question regarding the likelihood

of a move from Quebec showed no significant differences between the groups, it is interesting that once again Group 1 gave evidence of being permanent English speaking residents. It would be expected that if families regard Quebec as their permanent home that they would realize the need for their children to become functionally bilingual and be the most likely group to press for an educational system that would render this possible. In fact, French immersion programs were initially instigated by parent pressure.

Intelligence

Table 4 presents the results of t-test analysis of the Ravens Progressive Matrices Test administered to the groups in this study. The table first shows the grades combined and then treats them separately.

Table 4a

T-test Analysis of Ravens Progressive Matrices Scores

Grades 4,5 and 6 Combined

<u>Group</u>	<u>N</u>	<u>\bar{X}</u>	<u>t value</u>	<u>df</u>	<u>probability</u>
1	31	50.09	-2.39	59	.020
2	30	65.40			
1	31	50.09	-2.83	61	.006
3	32	68.31			
2	30	65.40	-.44	60	.663
3	32	68.31			

Table 4 b Grade 5

<u>Group</u>	<u>N</u>	<u>\bar{X}</u>	<u>t-value</u>	<u>df</u>	<u>probability</u>
1	15	53.9	-1.76	28	.090
2	15	69.0			
1	15	53.9	-2.61	28	.014
3	15	76.20			
2	15	69.0	-.79	28	.435
3	15	76.2			

Table 4 c Grade 6

<u>Group</u>	<u>N</u>	<u>\bar{X}</u>	<u>t-value</u>	<u>df</u>	<u>probability</u>
1	9	29.88	-3.25	22	.004
2	15	61.8			
1	9	29.88	-3.19	24	.004
3	17	61.35			
2	15	61.8	.13	30	.900
3	17	61.35			

As can be seen in Table 4, the mean intelligence percentile scores for Group 1 differed significantly from those of Group 2 and Group 3 ($p=.020$ and $p=.006$) Within the grade five level alone, a significant difference existed only between Group 1 and Group 3 ($p=.014$) (It will be noted that the mean for Group 3 at grade five is 76.2; while at grade six it is 61.3.) Within the grade six level alone there is again a significant difference between Group 1 and Group 2 ($p=.004$) and Group 1 and Group 3 ($p=.004$).

Table 5 supports the above findings, using the more complex statistical technique, ANOVA.

ANOVA: Ravens Progressive Matrices: Total Sample

Main Effect	Sum of Squares	df	Mean Square	F	Sig. of F
Group	20.705	2	10.353	5.744	.005

It can be noted that when the grades are combined (Table 4a) the mean for Group 1 is 50.09. However, when the grades are treated separately as in Tables 4b and 4c, the mean for Group 1 at grade five is 53.9, but at grade six it is 29.8. This low grade six mean for the drop out group is difficult to interpret unless it is related to the small N for grade six. However, it should be noted that grade six drop outs were, on the average thirty points below either of the means for the other two groups.

These results raise many questions, particularly in view of the reported finding that intelligence is not a major factor in the successful learning of spoken French in FI programs (Genesee, 1975). The relationship of intelligence to coping with instruction in a second language was not a central question in this study. It was the opinion of the FI school principal however, that lower intelligence is not a primary factor in drop out from FI - rather, "social" problems of one kind or another were suggested as the main cause. Parents' responses, as can be seen in Table 6, indicated that academic difficulties were the major factors in their child's leaving the French-taught

program and their moving to the English-taught stream.

Table 6

Parental Reasons for Child Leaving the FI Program*

<u>Reason**</u>	%
Academic Problems	31
Teacher Problems	5
Concern Over Child's Progress	10
Parents Opposed to Early FI	5
Learning Disability	26
Program Put Strain on Child	10
Other	13
	(N=19)

Children in this study who dropped out of FI had significantly lower I.Q.'s than children who did not have the opportunity to take part in such a program but who attended the same school and classes and had the same teachers and curriculum. This finding suggests that not all low I.Q. children are successful in a FI program and that some, at least, drop out.

Another study might attempt to examine the question of how low I.Q. children who remain in FI differ from low I.Q. children who drop out. Perhaps the lower I.Q. of the drop out group in this study results more from a diminished cognitive capacity in areas

* Although 25 of Group 1 parents completed the questionnaire, five parents denied that their children had been in the FI, although the school records showed otherwise. One n.a.

** Question number 34 of Questionnaire, see Appendix B.

specifically related to language acquisition, oral communication and expressive competency, whereas the low I.Q. children who can cope with FI may be due to cognitive difficulties less related to the learning of a second language.

Although the Ravens intelligence test is considered relatively culture and language free, there is also the question as to whether this test discriminates against children who may have visual or perceptual problems. Further investigation using other intelligence tests might clarify which characteristics are associated with drop out versus remaining in a French immersion program. It appears from our findings in this study regarding intelligence that certain factors or perhaps negative consequences not dealt with in previous studies of immersion programs may be hidden in a population that leaves those programs. Further study of such children is indicated.

Achievement

The results of t-test, ANOVA and ANCOVA analyses are presented in the tables below. Table 7 shows, that for grades five and six combined there was no significant difference between the groups on the reading comprehension test, but significant differences did occur between Groups 1 and 2 ($p=.011$) and Groups 1 and 3 ($p=.012$)

on the mathematics computation test.

Table 7

T-test Analysis - Achievement - Grades Five and Six

Group	N	<u>Reading*</u>			<u>Mathematics*</u>		
		\bar{X}	t-value	prob.	\bar{X}	t-value	prob.
1	23	31.69	-1.58	.121	21.78	-2.65	.011
2	32	35.37			25.65		
1	23	31.69	-1.95	.056	21.78	-2.59	.012
3	32	36.03			25.71		
2	32	35.37	-.30	.766	25.65	-.04	.966
3	32	36.03			25.71		

When the grade levels were analyzed separately, there was a significant difference between Groups 1 and 2 ($p=.03$) and Groups 1 and 3 ($p=.02$) on the reading test (Table 8) at the grade five level but not at the grade 6 level (Table 9). For the mathematics test, significant differences were found between Groups 1 and 3 ($p=.011$) at the grade five level only (Table 8). Thus according to these findings we can say that a significant difference does exist between the groups on both achievement tests but when analyzed by grade level this significance occurs only at the level of grade five.

*Maximum possible score on the M.A.T. Reading Comprehension Test was 50, on the Mathematics Computation test it was 40.

Table 8

T-test Analysis - Achievement - Grade Five

<u>Reading</u>				<u>Mathematics</u>			
Group	N	\bar{X}	t-value	prob.	\bar{X}	t-value	prob.
1.	15	29.0	-2.28	.03	21.1	-1.54	.135
2	17	34.88			23.47		
1	15	29.0	-2.45	.02	21.1	-2.75	.011
3	14	35.42			26.28		
2	17	34.88	-.19	.852	23.47	-1.55	.133
3	14	35.42			26.28		

Table 9

T-test Analysis - Achievement - Grade Six

<u>Reading</u>				<u>Mathematics</u>			
Group	N	\bar{X}	t-value	prob.	\bar{X}	t-value	prob.
1	8	36.75	.19	.848	23.0	-1.93	.067
2	15	35.93			28.1		
1	8	36.75	.07	.947	23.0	-.87	.395
3	18	36.50			25.27		
2	15	35.93	-.17	.868	28.1	1.32	.195
3	18	36.50			25.27		

The differential achievement results for grades five and six are difficult to interpret. As noted earlier, the intelligence differences were more pronounced at the grade six level. However, it is at the grade five level that significant differences occur on the reading and mathematics tests (Tables 8 and 9).

This finding is replicated with the use of the more detailed statistical procedure, analysis of variance, on which again, the greatest differences are to be found at the grade five level on both the reading and the mathematics tests. (Table 10)

Elsewhere in this study certain demographic and personal variables were found to differ significantly between the three groups. Those which were thought likely to have a bearing on a child's achievement (intelligence, sex, level of mother's schooling and projected level of child's schooling) were introduced into an ANCOVA as control variables. (Table 11)

Intelligence and level of mother's schooling affected the significance levels while sex and projected level of child's schooling had no significant effect at all and are not shown in Table 11. It will be recalled that the drop out group was composed largely of boys.

Although the findings on achievement give a somewhat mixed set of results, we can conclude that significant differences did exist between the groups on both measures of achievement, particularly at the grade five level. Thus the hypothesis that no significant differences between the groups would occur on reading or mathematics achievement can be rejected, but with some qualification.

Table 10ANOVA: Achievement Raw Scores

<u>Reading Comprehension</u>			<u>Mathematics Computation</u>	
Grade	F	Significance	F	Significance
4,5,6	1.929	.150	4.128	.019
5	3.412	.041	4.177	.021
6	.024	.999	1.973	.151

Table 11ANCOVA: Achievement Raw Scores

<u>Covariate</u>	<u>Reading Comp.</u>		<u>Mathematics Computation</u>	
Grade	F	Sig.	F	Significance
4,5,6				
Ravens	8.074	.006	14.064	.001
Mother's Schooling	4.065	.045	.145	.999
Grade 5				
Ravens	14.153	.001	18.826	.001
Mother's Schooling	.755	.999	1.489	.230
Grade 6				
Ravens	4.324	.044	7.577	.010
Mother's Schooling	5.472	.025	1.492	.230

As can be seen in Table 11 the significance levels on both the reading comprehension and mathematics computation tests are affected by controlling for intelligence. Level of mother's schooling does not affect the significance levels except in the case of grade six reading comprehension test where significance changed from $p=.999$ to $p=.025$.

Parental Attitudes

Table 12 shows that a significant difference was found between the three groups on three parental attitude variables: parents' bilingual wishes for the child; plans for the child's schooling at the grade seven level and parents' estimate of the child's eventual total level of schooling.

Table 12Significant Parent Attitude Variables*

Variable	Group 1 (N=25) %	Group 2 (N=31) %	Group 3 (N=28) %	significance
<u>Bilingual Wishes for Child(21)**</u>				
Full Bilingualism	36	61	82	$\chi^2=15$ df=8 p=.05
Less Than Full Bilingualism	64	39	18	
<u>Plans for Grade 7 (25)</u>				
Grade 7 FI	16	46	63	$\chi^2=26$ df=12 p=.01
Regular High School	20	10	14	
Private English High School	36	30	11	
Other	28	14	12	
<u>Estimate of Child's total Schooling(27)</u>				
Less than Univ.	28	13	22	$\chi^2=31$ df=20 p=.04
University	68	62	59	
Post Grad. Univ.	4	24	14	

* See Appendix E for print out of all categories given in the questionnaire and full variable names and labels.
** Bracketed numbers refer to questionnaire item number.

As Table 12 indicates, parents of Group 1 children (the drop out group) had significantly lower bilingual aspirations for their children than did parents of either Group 2 (those who never were in FI) or Group 3 (the non-immersion school group). It is possible that the drop out experience may have modified parental views of a child's capabilities of learning French and consequently parental wishes in this regard may have been altered. This possibility seems to be corroborated by the significant finding ($p=.01$) on parental plans for the child at the grade seven level. At grade seven children in this school board again have the opportunity to choose a specialized French immersion program for one year only. Sixteen percent of parents of children who had dropped out of the FI expressed the intention of putting their children in this FI program at the grade seven level, while forty-six percent of Group 2 parents and sixty-three percent of Group 3 parents chose this option.

It is interesting to speculate as to why Group 2 parents would differ from parents of Group 3 in their bilingual wishes for their children. Again referring to Table 12, it can be seen that sixty-one percent of Group 2 parents and eighty-two percent of Group 3 parents state that they would like to see their children become fully

bilingual. It may be that contact with a FI milieu has had a qualifying effect on Group 2 parental attitudes towards French learning or it may be that the likelihood of moving from the province affects attitudes to French learning.

Parents of Group 1 have quite high educational aspirations for their children as measured by estimated level of schooling that the child would attain. However, their aspirations were not as high as Group 2 or Group 3 parents where it is seen in Table 12 that nearly one-quarter of Group 2 parents expect their children to attend post graduate university and fourteen percent of Group 3 parents foresee this possibility. This is in comparison to only four percent for Group 1 parents' estimates of their child's likelihood of attending post graduate school.

The hypothesis that no significant differences would occur between the three groups regarding parental attitudes towards bilingual education and educational aspirations is rejected.

Table 13 shows the non-significant parent attitude variables.

Table 13

Non-Significant Parent Attitude Variables*

Variable	Group 1 (N=25) %	Group 2 (N=31) %	Group 3 (N=28) %	
<u>Chance of Move from Quebec Within 2 yrs. (12)**</u>				
Likely	8	38	25	(p=.065)
Unlikely	76	51	71	
Other	16	11	3	
<u>Bilingual Wishes for Other Children in Family (22)</u>				
Different	28	19	10	(p=.057)
Same	72	81	90	
<u>Child's interest in Learning (23)</u>				
Very High	12	32	25	(p=.17)
Medium or Low	88	68	75	
<u>Child's Interest in Learning French (24)</u>				
Very High	4	9	10	(p=.29)
Medium or Low	86	91	90	
<u>Mother's French Self Rating (19)</u>				
Fluent	8	16	10	(p=.40)
None at all	20	32	38	
In between	72	52	52	
<u>Father's French Self Rating (20)</u>				
Fluent	16	32	29	(p=.32)
None at all	24	28	36	
In between	60	40	35	

*See Appendix E for print out of all categories given

** Bracketed numbers refer to questionnaire item number.

Parents of children in Group 1 rated their children's interest in learning as lower than either of the other two groups (Table 13). Although this difference was not significant, it is interesting to note that motivation was highest in Group 2 - thirty-two percent were considered highly motivated compared to twelve percent of Group 1 who share the same classes.

The parent's assessment of the child's interest in learning French follows a similar pattern as interest in learning in general, however, here the extremes are more pronounced, with only four percent of Group 1, nine percent of Group 2 and ten percent of Group 3 being regarded as having high interest levels in the learning of French. Considering the data available from previous studies on the importance of motivation in second language learning (Gardner & Lambert, 1972), these findings are of note.

Whether or not the differences between the groups in interest levels in learning and in the learning of French are related to the drop out experience or factors causing drop out in the first place, could be more directly investigated in a subsequent study by putting more precise questions to parents of drop outs.

As can be seen in Table 13, Group 2 parents rate themselves highest of all groups with regard to

fluency in French. Close to one-third of Group 2 fathers claimed to be fluent in French and sixteen percent of Group 2 mothers claimed such fluency. Parents in the non-immersion school were the least capable of speaking French with close to forty percent of both fathers and mothers unable to speak any French at all. Group 1 parents appear to be the most cautious in rating their French speaking skills, indicating the smallest percentages at both extremes of the scale. Perhaps Group 2 families, being the most mobile, have encountered situations connected with occupational mobility that created the need or motivation to learn French, or, alternatively, the greater mobility of this group could be tied to previous ability to speak the language. The moderate ratings of Group 1 parents could simply be a reflection of being in a better position to rate themselves accurately, having been in this province the longest (in fact, primarily rooted here) and having been exposed to rather poor teaching of French over a long period of their own schooling.

In general the parents of all groups had similar bilingual wishes for other children in the family. However, although not significant, there was a suggestion that the more exposure a parent had had to FI the more likely he was to qualify his bilingual

wishes for other children in the family. As can be seen in Table 13, twenty-eight percent of Group 1 parents have different bilingual wishes for other children in the family, while only nineteen percent of Group 2 parents and ten percent of Group 3 parents expressed having such different bilingual wishes for the other children in the family.

It is possible that parental attitudes change as a consequence of the drop out factor. If parental attitudes towards French learning or towards early FI programs had been negative when their children started school, such parents could have chosen to send their children to one of several nearby private schools. Besides, if the attitudes of Group 1 parents were basically negative one would expect those attitudes to be consistent for all children in the family, and this was not the case. In addition, when asked for reasons for the child changing to the English stream from the FI, fifty-eight percent of the parents of the drop outs gave academic problems or learning disabilities as the reason. Only one parent admitted to being opposed to early FI.

Learning and Behaviour Problems

Ratings of learning and behaviour problems were obtained in order to provide an index of teacher

attitudes towards children in the English stream of a FI school and to explore whether negative attitudes, if present, were more associated with drop out children than children who had never been in the FI but were also part of the English stream. Teachers rated the children by class and thus Groups 1 and 2 appeared on the same lists with the names randomized. Thus there was no way to identify Group 1 from Group 2 children on the rating scales and as mentioned previously, teachers were really unaware as to which children had been in FI at one time and which had not.

Table 14 presents the teacher ratings of learning problems for each group. These findings are also broken down by sex since the presence of learning problems tends, normally, to occur much more frequently in boys than in girls.

Table 14

Teacher Ratings of Learning Problems by Group by Sex

Variable	Group 1 (N=31) %	Group 2 (N=31) %	Group 3 (N=33) %	Significance
<u>Learning Problems</u>				
Present	48	48	24	$\chi^2=21$
Absent	52	52	76	df=12 p=.04
Present in boys	46 (N=26)	50 (N=16)	40 (N=15)	* p=.85 n.s.
Present in girls	60 (N=5)	46 (N=15)	11 (N=18)	$\chi^2=7$ df=2 p=.03

Table 14 shows that the three groups differed significantly with regard to teacher ratings of learning problems ($p=.04$). Teachers reported twice as many learning problems in Group 1 and Group 2 as compared to Group 3. Whether this finding is associated with differential teacher attitudes or expectations towards children who, for one reason or another, are excluded from a prestige educational stream, the FI, is mere speculation but deserves more investigation. The hypothesis that no significant differences between the groups would exist in reference to the presence of learning problems is rejected. A question underlying this part of the study was whether or not the teachers would rate Group 1 higher in learning problems than Group 2. In light of the significant differences between the groups on intelligence and achievement, it is of interest that both Groups 1 and 2 received equal ratings on a scale that was meant to pick up teacher's subjective evaluations of children's learning problems.

It is also interesting to notice that close to equal percentages of boys and girls in the English stream of the FI school were regarded as having learning problems. Although the number of girls in Group 1 is very small, it may be that girls with learning problems are more clearly evident in a classroom than boys. However, this does not explain what appears to be a generalization

of teacher attitudes to the girls in Group 2, who occupy the same classes as those from Group 1. The distribution between boys and girls on this dimension in Group 3 is much closer to what is expected in a typical classroom.

Despite subjective speculation on the part of teachers and principals that drop out from FI is primarily associated with behavioural problems or "social adjustment" problems, Group 2 children who had never been in FI but who were in the English stream, had the largest reported percentage of behavioural problems as rated by the teachers in the same manner as were the learning problems. As Table 15 shows, forty-seven percent of Group 2 children were rated as having behavioural problems, while the drop out group rating is twenty-two percent, which is quite close to the rating for Group 3 of eighteen percent.

Table 15

Teacher Ratings of Behavioural Problems

Variable	Group 1 (N=31)	Group 2 (N=31)	Group 3 (N=33)
<u>Behaviour Problems</u>			
Present	22	47	18
Absent	78	53	82

(p=.13)

Although there is no significant difference between the groups on this variable, the findings are surprising. It is not possible to say that the teachers

of the English stream in the FI school rated children as having more behavioural problems than the teachers of the FI classes since the scale was not administered to teachers in the FI classes, however, this would make an interesting study. The fact that subjective evaluations did not result in Group 1 being rated the highest in this regard suggests that these children do not at this time of their schooling exhibit any significant number of behavioural problems.

Summary of Results

The drop out group had significantly lower intelligence scores than the other two groups. The three groups did not differ significantly in reading achievement but the drop out group was significantly lower than the other two groups on the mathematics achievement test. Differential findings by grade level in intelligence and achievement were obtained. Teachers rated both groups in the English stream as having twice as many learning problems as the non-immersion school group. This was a significant finding. The greatest number of behavioural problems were reported for the group that had never been in FI. Attitudes of the parents of the drop out group differed from the attitudes of other parents regarding bilingual education. These parents also held different educational aspirations for their children than did the parents of the other groups.

CHAPTER SIXSummary and Conclusions

The evaluative studies on the French immersion (FI) programs appear to examine the efficacy of the programs as demonstrated by the academic performance of the children who remain in those programs. There has been no extensive study of a group of children that dropped out of FI nor have such children been compared with their peers in the same classes who were never in FI, or to another English-taught group from a non-immersion school serving a comparable socio-economic neighborhood. The purpose of this study was to investigate and compare these three groups in terms of (1) intelligence (2) achievement (3) teacher ratings of learning and behaviour problems and (4) parental attitudes towards bilingual education and regarding educational aspirations for their children.

Two groups of grade five and six children receiving their education in the English stream of a FI school in Montreal were compared with a group from a regular English instruction, non-immersion school. Group 1 consisted of thirty-one children who had been in FI at one time, but who had dropped out and had been in the English stream for at least two years. Group 2 were thirty-two children who had never been in FI

because of entry into the school at or after the grade one level, too late to be included in the PI program. Groups 1 and 2 shared the same classes and were exposed to the same teachers and curriculum. Group 3 consisted of thirty-four children attending a school under the same board as the school from which Groups 1 and 2 were drawn. The curriculum of this group was the same as that of the English stream in the French immersion school.

The Ravens Progressive Matrices (Raven, 1958) and the Metropolitan Achievement test, Intermediate Battery, Reading Comprehension and Mathematics Computation tests (Durost et al., 1970) were administered to all three groups to obtain measures of intelligence and achievement. A questionnaire and a rating scale, both designed by the investigator, were administered to parents and teachers to secure data on background variables and attitudes. On most variables, cross-tabulations of the data were performed and the Chi square test used to determine significant differences between the groups. The five percent level was chosen for the criterion of significance. Analysis of variance and t-test were used on the intelligence and achievement variables.

It was hypothesized that there would be no significant difference between the three groups in intelligence, achievement, teacher ratings of learning

and behaviour problems, parental attitudes towards bilingual education or educational aspirations for their children.

A significant difference was found between the drop out group (Group 1) and the group that had never been in FI (Group 2) in intelligence ($p=.020$) and between Group 1 and Group 3 (the non-immersion group) ($p=.006$), therefore the hypothesis regarding intelligence was rejected. The fact that the drop out group had the lowest intelligence scores deserves further study to see if these results can be replicated. The intelligence and achievement scores between Groups 2 and 3 did not differ significantly. If there is an overall negative aspect to being in the English stream in a FI school, it has not been reflected in this study in either lowered intelligence or achievement scores for the children who were never in FI.

A significant difference was found between Groups 1 and 3 ($p=.056$) on the reading comprehension test and between Groups 1 and 2 ($p=.011$) and Groups 1 and 3 ($p=.012$) on the mathematics achievement test when grades five and six were combined in the analysis. When treated separately, significance occurred for grade five between Groups 1 and 2 ($p=.03$) and Groups 1 and 3 ($p=.02$) on the reading comprehension test and between

Groups 1 and 3 ($p=.011$) on the mathematics computation test. At the grade six level there was no significant difference between any of the three groups on either of the achievement tests. However, when intelligence was controlled in the analysis significant differences were found on both achievement tests at both grade levels. (reading test, grade 5: $p=.001$; grade six, $p=.044$)(mathematics test, grade 5: $p=.001$; grade 6. $p=.010$) Controlling for level of mother's schooling yielded significance on the reading comprehension test for the combined grade levels ($p=.045$) and at the grade six level ($p=.025$). The hypothesis regarding achievement was rejected but with some qualification as the findings do suggest that further exploration is necessary.

One disturbing finding was that of ethnic differences between the groups since an effort had been made to eliminate any immigrant children from the sample. In addition there were other significant differences between the groups on other demographic variables (father's mother tongue: $p=.0001$; location father brought up: $p=.0002$; child's length of residence in Quebec: $.006$; location mother brought up: $p=.02$; level of mother's schooling: $p=.04$; mother's occupation: $p=.05$). These findings highlight the importance of collecting detailed background data

on students used in educational research, since differences in such data may confound other results.

The results of the teacher rating scales tended to indicate more negative dimensions associated with both groups in the English stream of the FI school. Twice as many learning problems were reported for Groups 1 and 2 as for Group 3 ($p=.04$). Group 2, the group that had never been in FI received the highest teacher ratings for the presence of behaviour problems. It had been the subjective judgment of the principal of the FI school that the primary cause of dropping out of FI was behavioural difficulties of one kind or another, but this is not reflected in the teacher ratings in this study.

Parents differed significantly in their bilingual wishes for their children ($p=.05$) and their plans for their children at grade seven ($p=.01$). Parental estimates of the child's eventual total level of schooling also differed significantly ($p=.04$). On all three variables Group 1 parents were lower than the other groups' parents. Parents of drop outs from FI may generalize the child's past difficulty with FI to other subject areas and limit expectations for the future education of their children. In addition, these parents seem to devalue subsequent learning of French for these children.

The fact that parents believed that the major factor in their child's dropping out of FI was academic difficulty tends to contradict assertions of administrators

and educators involved in FI programs that social adjustment problems are the principal causes of dropping out. Whether this belief underlay the judgments of the teachers on the rating scales and is generalized to the whole English stream or not, deserves further exploration using more precise instruments to obtain such subjective data.

The groups differed, though not significantly so, on the degree of likelihood of moving from the province within the next two years, with parents of children who had never been in FI (Group 2) the most likely to move. Only eight percent of the parents of the drop out group indicated a likelihood of such a move.

Conclusions

As with most exploratory studies, this research attempted to investigate an area of study which had been neglected and resulted in many questions and unforeseen contingencies. For example, are drop out children from a FI program less intelligent than children who stay in a FI program? In this study it was found that these children are less intelligent than children from a regular non-immersion school and less intelligent than their peers in the same classes. If this is generally the case, then claims that FI

programs work as well with low I.Q. children as with those with high I.Q., deserve further study. The question of why children drop out of FI deserves precisely focussed exploration since the indications in this investigation were contrary to the stated opinions of administrators and the general beliefs of educators involved in the FI program.

This study pointed out the need to compare children matched for grade, sex and intelligence who have dropped out of FI with children who remain in FI in terms of the variables looked at in this study. It seems from this study that drop out children differ from those educated in the regular non-immersion school and also that the differences found were greater regarding achievement, at the grade five level than at the grade six level. Whether similar differences occur at lower grade levels ought to be explored. Whether the better performance at the grade six level represents some degree of recovery from earlier difficulties is speculation at this point.

It would appear from this research that much more work focussing on specific dimensions is required to identify the variables that are associated with dropping out of FI. The achievement of such children and the quality of schooling in the English stream of

a FI school should be investigated longitudinally to assess the impact of the drop out event and the educational consequences, if any, at the various grade levels.

Although this study investigated children from high socio-economic settings, the implications of the findings may be relevant for other socio-economic groups. For example, the reasons for drop out from FI and the possible long term effects on the child of parental attitudes surrounding this event should be explored across socio-economic class lines.

Further study is needed into the implications of the findings contained in this study for another reason. There is currently planning in Montreal to designate certain schools as FI schools and neighboring schools as non-immersion schools. Although such a plan might ease certain administrative problems associated with having two different language instruction streams within one school, this plan could result in schools with very different intellectual and achievement profiles and possibly with a harmful attitudinal climate for children attending the less prestigious, non-immersion schools.

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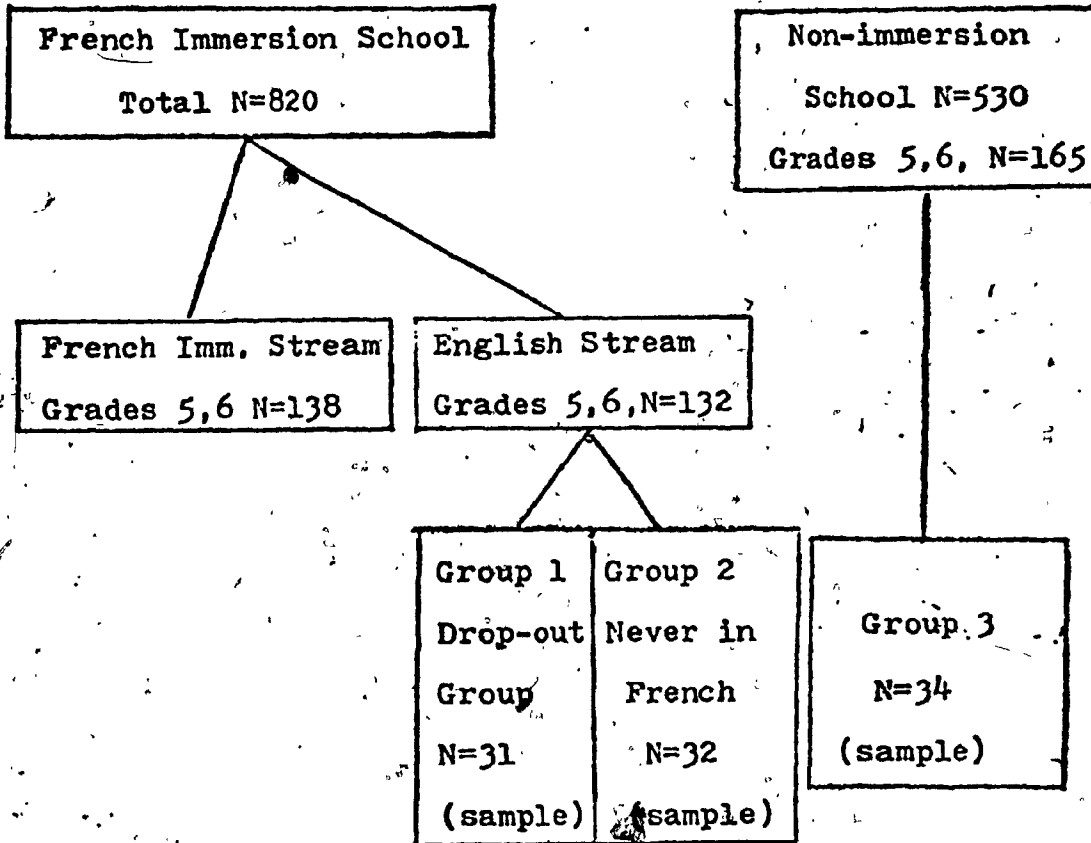
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APPENDIX A



Questionnaire

() () () Child's name _____ Phone _____

() () () () Date of Birth _____

Check ONE item only on each of the following questions.

() 1. Total number of children in family _____

() 2. This child's position in the family

(1) oldest (5) fifth

(2) second (6) sixth

(3) third (7) seventh

(4) fourth (8) more than seventh

() 3. Sex

(1) male

(2) female

() 4. Grade in school

(1) grade five

(2) grade six

(3) grade four

() 5. Grade at which the child first entered this school

(1) kindergarten (5) grade 4

(2) grade 1 (6) grade 5

(3) grade 2 (7) grade 6

(4) grade 3

- () 6. Language spoken most frequently to this child at home
- (1) English
 - (2) French
 - (3) Other: specify _____
- () 7. Mother tongue of the child's mother
- (1) English
 - (2) French
 - (3) Other: specify _____
- () 8. Mother tongue of the child's father
- (1) English
 - (2) French
 - (3) Other: specify _____
- () 9. How long has this child lived in Quebec
- (1) all his/her life
 - (2) 1 to 3 years
 - (3) 3 to 5 years
 - (4) 5 to 7 years
 - (5) 7 to 9 years
 - (6) more than 9 years
 - (7) other _____
- () 10. Was the child's mother brought up in Quebec
- (1) yes
 - (2) no: where _____
- () 11. Was the child's father brought up in Quebec
- (1) yes
 - (2) no: where _____

()

12. What do you think are the chances of your moving out of this province within the next two years

- (1) very certain
- (2) quite likely
- (3) a possibility
- (4) unlikely
- (5) extremely unlikely
- (6) no chance at all
- (7) have no idea
- (8) other _____

()()

13. What is the total number of years of schooling of the mother (e.g. high school in Quebec plus two years of secretarial school=13) _____ years.

()()

14. What is the total number of years of schooling of the father, _____ years

()

15. What is the occupation of the mother (if not working state any past occupation, volunteer or otherwise) _____

()

16. What is the occupation of the father

()

17. What is the religious affiliation of the mother

- (1) Protestant
- (2) Catholic
- (3) Jewish
- (4) Other _____

- () 18. What is the religious affiliation of the father
- (1) Protestant
 - (2) Catholic
 - (3) Jewish
 - (4) Other _____
- () 19. How would the mother rate herself in French speaking ability
fluent 1 2 3 4 5 6 7 not at all
- () 20. How would the father rate himself in French speaking ability
fluent 1 2 3 4 5 6 7 not at all
- () 21. Do you wish this child to
- (1) become a fully balanced bilingual in French and English
 - (2) be able to get along in French in the world of work
 - (3) be able to speak enough French to get along in stores or restaurants
 - (4) be able to speak enough French to handle an emergency (car, plumbing, injury)
 - (5) be able to speak a few words in a situation in which the other person speaks no English at all.
 - (6) It is not essential for this child to know any French

()

22. Do you have approximately the same as the above expectations for the eventual French speaking ability of the other children in your family.

(1) there are no other children in the family

(2) yes

(3) no: Can you give a brief explanation of the nature of the difference _____

()

23. Do you see the child's interest in learning as

(1) very high

(2) high

(3) medium

(4) low

(5) very low

(6) don't know

(-)

24. Do you see the child's interest in learning French as

(1) very high

(2) high

(3) medium

(4) low

(5) very low

(6) don't know

()

25. What are your tentative or decided plans for this child at the grade seven level

- (1) a regular public high school
- (2) a private school where the main language of instruction is English
- (3) a boarding school where the main language of instruction is English
- (4) a public high school where the language of instruction is French and the mother tongue of most of the pupils is French
- (5) a private school where the language of instruction is French and the mother tongue of most of the pupils is French
- (6) a public grade seven French immersion school where the language of instruction is French and the mother tongue of the students is generally English
- (7) don't know yet at all
- (8) other _____

()

26. Has this child ever been in a French immersion program at any other school (include nursery or kindergartens) or in a school where the language of instruction was French

- (1) no
- (2) yes: where _____
at what levels _____

() ()

27. How many years of schooling is it your guess that this child will ultimately complete _____ years

()

28. Were both French immersion and English-taught classes equally available to this child at the level at which entry was made to this school.

(1) yes

(2) no: only English language instruction was available

(3) no: only French language instruction was available

()

29. Has this child ever been in the French immersion program in this school

(1) no

(2) yes

If the answer to this question is 'yes' please complete the remaining questions.

()

30. Age at which the child moved from French immersion to English-taught class

(1) age 5

(5) age 9

(2) age 6

(6) age 10

(3) age 7

(7) age 11

(4) age 8

(8) age 12

REPEAT CROSSTABS	76707316	PAGE
	(5) FEW WORDS IF NECESS (6) NONE NECESS (9) UNKNOWN/ SAME (1) NO OTHER CHILD (2) YES (3) NO (9) UNKNOWN/ INTRSTL (1) VERY HIGH (2) HIGH (3) MEDIUM (4) LOW (5) VERY LOW (6) MONT KNOW (9) UNKNOWN/	
	INTRST (1) VERY HIGH (2) HIGH (3) MEDIUM (4) LOW (5) VERY LOW (6) DONT KNOW (9) UNKNOWN/	
	PLANS (1) REG PUB H S (2) PRIV SCH ENG (3) BOARDING SCH ENG (4) PR PUB H S (5) PR PRIV SCH (6) GR 7 IMM PR (7) DONT KNOW (8) OTHER (9) UNKNOWN/	
	PRENG (1) YES (2) NO (9) UNKNOWN/	
	FT (1) NO (2) YES (3) GROUP 3 (9) UNKNOWN/	
	AGMOVE (1) YES (2) NO (3) YES (4) NO (5) YES (6) NO (7) YES (8) NO (9) UNKNOWN/	
	WHMOVE (1) YES (2) NO (3) YES (4) NO (5) YES (6) NO (7) YES (8) NO (9) UNKNOWN/	
	WHMOVE (1) PARENT (2) TEACHER (3) PRINCIPAL (4) CHILD (5) - ONE OF ABOVE (6) OTHER (9) GROUP 3 OR 2 (9) UNKNOWN/	
	AGRETT (1) YES (2) NO (3) GROUP 3 OR 2 (9) UNKNOWN/	
	REASON (1) ACADEMIC PROB (2) TEACHER PROB (3) PEER PROB (4) PROGRESS CONCERN (5) PANTS AGAINST F (6) LEARN DISABILITY (7) STRAIN ON CH (8) OTHER (9) GROUP 3 OR 2 (9) UNKNOWN/	
	RESULT (1) YES (2) NO (3) GROUP 3 OR 2 (9) UNKNOWN	
	CODE=RAVENS, MATPRS, MATIPR, MATSPR, MATSPR, MATSS, MATSSS (000)/ GROUP TO BEHAVPR, MOCHED TO MOVE, MOHCC TO OTHER (10)/ ZABE (999)/ MATIS, MATIS (0)/ MOTHSC, MATHSCH, TOTALSCH (99)/ PRENB TO RESULT (0/9)	
MISSING VALUES		
COMPUTE	GROUPX=GROUP	
VALUE LABELS	GROUPX (1) BOTH EXPER GROUPS (2) CONTROL GROUP (9) UNKNOWN	
VAR LABELS	GROUPX, GROUP, RECODE	
MISSING VALUES	GROUPX (9)	
COMPUTE	LRNPRI=LEARNPR	
RECODE	LRNPRI (1) THRU 2=1 (3) THRU 7=2 (9=9)	
VALUE LABELS	LRNPRI (1) NONE (2) YES (9) UNKNOWN	
VAR LABELS	LRNPRI, RECODE OF LEARNPR	
MISSING VALUES	LRNPRI (9)	
COMPUTE	RAVENS1=RAVENS	
RECODE	RAVENS1 (05=1) (06 THRU 10=2) (11 THRU 25=3) (26 THRU 50=4) (51 THRU 75=5) (76 THRU 90=6) (91 THRU 99=7) (100=8)	
VALUE LABELS	RAVENS1 (1) TO 5TH PERCENTILE (2) TO 10TH PERCENTILE (3) TO 25TH (4) TO 50TH PERCENTILE (5) TO 75TH (6) TO 90TH (7) TO 95TH (8) TO 99TH (9) UNKNOWN	
VAR LABELS	RAVENS1, RAVENS, RECODED	
MISSING VALUES	RAVENS1 (0)	
COMPUTE	MOVE1=MOVE	
RECODE	MOVE1 (1) THRU 3=1 (4 THRU 6=2) (7=7) (9=9)	
VALUE LABELS	MOVE1 (1) LIKELY (2) UNLIKELY (7) NO IDEA (9) UNKNOWN	
VAR LABELS	MOVE1, MOVE, RECODED	
MISSING VALUES	MOVE1 (9)	
COMPUTE	MOTHSCI=MATHSCH	
RECODE	MOTHSCI (6 THRU 14=1) (15 THRU 16=2) (17 THRU 21=3) (99=9)	
VALUE LABELS	MOTHSCI (1) LESS UNIV (2) UNIVERSITY (3) POST GRAD (9) UNKNOWN	
VAR LABELS	MOTHSCI, RECODE OF MATHSCH	
MISSING VALUES	MOTHSCI (9)	
COMPUTE	FATHSCI=FAHSCH	
RECODE	FATHSCI (9 THRU 14=1) (15 THRU 16=2) (17 THRU 23=3) (99=9)	
VALUE LABELS	FATHSCI (1) LESS UNIV (2) UNIV (3) POST GRAD (9) UNKNOWN	
MISSING VALUES	FATHSCI (9)	
COMPUTE	MOTHPR1=MOTHER	
RECODE	MOTHPR1 (6 THRU 7=1) (8 THRU 5=2) (9 THRU 2=3) (9=9)	

REPEAT CROSSTABS	<p>VALUE LABELS MOTHFR1 (1)LOW ABILITY (2)MEDIUM (3)HIGH ABILITY (9)UNKNOWN VAR LABELS MOTHFR1,RECODE OF MOTHFR MISSING VALUES MOTHFR1 (9) COMPUTE FATHFR1=FATHFR</p> <p>RECODE FATHFR16 THRU 7=1173 THRU 5=6111 THRU 2=311997 FATHFR1 (1)LOW ABILITY (2)MEDIUM (3)HIGH ABILITY (9)UNKNOWN VAR LABELS FATHFR1,RECODE OF FATHFR MISSING VALUES FATHFR1 (9) COMPUTE PLANS1=PLANS RECODE PLANS1(3=1) (1 THRU 2=2) (4 THRU 6=3) (7=4) (8=5) (9=9) FATHFR1 (1)LOWEST (2)MEDIUM (3) HIGHEST (4)STUDENT KNOW (5)OTHERKNOW</p> <p>VALUE LABELS PLANS1 (1)LOREST (2)MEDIUM (3) HIGHEST (4)STUDENT KNOW (5)OTHERKNOW VAR LABELS PLANS1,RECODE OF PLANS MISSING VALUES PLANS1 (9) COMPUTE TOTSCH1=TOTALSCH RECODE TOTSCH1 (11 THRU 14=1) (15 THRU 16=2) (17 THRU 21=3) (99=9) VALUE LABELS TOTSCH1 (1) LESS UNIV (2) UNIV (3) POST GRAD (9) UNKNOWN VAR LABELS TOTSCH1,RECODE OF TOTALSCH MISSING VALUES TOTSCH1 (9) CROSSTABS TABLES=GROUP BY FATHFR1,FATHFR1,CHPO,MOTHPO,MOTHSCH,MOTHOCCO MODEL=HAVENS1,TOTALSCH,BILMISH1,PLANS,LEARNPR,REASON/ LEARNPR BY SEX/BEHAVPR BY SEX ALL STATISTICS READ INPUT DATA</p>
	<p>GIVEN 2 DIMENSIONS. INITIAL CM ALLOWS FOR 1720 CELLS. MAXIMUM CM ALLOWS FOR 6597 CELLS.</p>

REPEAT CROSS TABS
 FILE ACF (CREATION DATE = 76/07/27.) ED STUDIES THESIS
 CROSS TABULATION OF
 EXPER 1, 2 OR CONTROL 3 BY FATHLANG FATHERS MOTHER TONGUE
 76/07/27. PAGE 1 OF 1

GROUP	FATHLANG	FRENCH	OTHER	ROW TOTAL
1	2	3	4	5
EXPERIMENTAL 1	25	0	0	25
EXPERIMENTAL 2	100.0	0	0	29.8
EXPERIMENTAL 3	34.7	0	0	
EXPERIMENTAL 4	29.8	0	0	
CONTROL 1	30	1	0	31
CONTROL 2	96.8	3.2	0	36.9
CONTROL 3	41.7	33.3	0	
CONTROL 4	35.7	1.2	0	
CONTROL 5	17	2	9	28
CONTROL 6	60.7	7.1	32.1	33.3
CONTROL 7	23.6	66.7	100.0	
CONTROL 8	20.2	2.4	10.7	
COLUMN TOTAL	72	3	9	84
TOTAL	85.7	3.8	10.7	100.0

RAV CHI SQUARE = 22.98293 WITH 4 DEGREES OF FREEDOM. SIGNIFICANCE = .0001
 CRAMER'S V = .30987
 CONTINGENCY COEFFICIENT = .46349
 KENDALL'S TAU B = .43049
 KENDALL'S TAU C = .26556
 GAMMA = .94817
 SOMER'S D (ASYMMETRIC) = .69809 WITH GROUP DEPENDENT = .26547 WITH FATHLANG DEPENDENT.
 SOMER'S D (SYMMETRIC) = .38466
 NUMBER OF MISSING OBSERVATIONS = 13

16/07/27

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REPEAT CROSSTABS

FILE AC (CREATION DATE = 76/07/27.) ED STUDIES THESIS

GROUP EXPER 1,2 OR CONTROL 3 CROSSTABULATION OF FATHPO FATHER PD RAISED

4 FATHPO

GROUP	COUNT	ROW PCT	COL PCT	YES	NO	ELSE	ENG TRY	COUN	NON ENG COUNTRY	ROW TOTAL
EXPERIMENTAL 1	12	12.0	12.0	1	1	0	0	0	0	25
EXPERIMENTAL 2	13	13.0	13.0	1	1	1	1	1	1	31
CONTROL	32	32.0	32.0	4	4	4	4	4	4	84
TOTAL	57	57.0	57.0	6	6	5	5	5	5	136

RAY CHI SQUARE = 26.70042 WITH 6 DEGREES OF FREEDOM. SIGNIFICANCE = .0002

GRAMER'S V = .39865

CONTINGENCY COEFFICIENT = .49112

KENDALL'S TAU B = .29324

KENDALL'S TAU C = .29889

GAMMA = .41524

SOMERS'S D (ASYMMETRIC) = .28659 WITH GROUP DEPENDENT = .30901 WITH FATHPO DEPENDENT.

SOMERS'S D (SYMMETRIC) = .29316

NUMBER OF MISSING OBSERVATIONS = 13

REPEAT CROSSTABS

FILE AC (CREATION DATE = 76/07/27.) ED STUDIES THESIS 1

GROUP EXPER 1,2 OR CONTROL 3 CROSSTABULATION OF FATHPO FATHER PD RAISED

4 FATHPO

CONCORDIA UNIVERSITY

COMPUTER CENTER

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GROUP	1	2	3	4	5	6	7	8	9	10	TOTAL
EXPERIMENTAL 1	23	0	0	0	0	0	0	0	0	0	23
EXPERIMENTAL 2	12	5	9	3	2	0	0	0	0	0	31
CONTROL	14	2	5	3	2	2	2	2	2	2	28
TOTAL	58.3	8.3	16.7	9.5	4.8	2.4	2.4	2.4	2.4	2.4	100.0

GROUP	1	2	3	4	5	6	7	8	9	10	TOTAL
EXPERIMENTAL 1	92.0	0	0	0	0	0	0	0	0	0	92.0
EXPERIMENTAL 2	27.6	0	0	0	0	0	0	0	0	0	27.6
CONTROL	16.1	16.1	29.0	9.7	6.5	0	0	0	0	0	36.9
TOTAL	14.3	71.4	64.3	37.5	50.0	0	0	0	0	0	100.0

GROUP	1	2	3	4	5	6	7	8	9	10	TOTAL
EXPERIMENTAL 1	16.7	2.4	6.0	3.6	2.4	2.4	2.4	2.4	2.4	2.4	28
EXPERIMENTAL 2	50.0	7.1	17.9	10.7	7.1	7.1	7.1	7.1	7.1	7.1	33.3
CONTROL	28.6	20.6	35.7	37.5	50.0	100.0	100.0	100.0	100.0	100.0	33.3
TOTAL	16.7	2.4	6.0	3.6	2.4	2.4	2.4	2.4	2.4	2.4	28

RAV CHI SQUARE = 24.47675 WITH 10 DEGREES OF FREEDOM. SIGNIFICANCE = .0084
 CRAMER'S V = .38170
 CONTINGENCY COEFFICIENT = .47502
 KENDALL'S TAU B = .29273
 KENDALL'S TAU C = .28019
 GAMMA = .44021
 SOMER'S D (ASYMMETRIC) = .30467 WITH GROUP DEPENDENT. = .28126 WITH CHPO DEPENDENT.
 SOMER'S D (SYMMETRIC) = .29250
 NUMBER OF MISSING OBSERVATIONS = 13

76/07/27. PAGE 1

REPEAT CROSS TABS
 FILE ACF (CREATION DATE = 76/07/27.) ED STUDIES THESIS
 GROUP EXPER 1,2 OR CONTROL 3 CROSS TABULATION OF MOTHER PG RAISED BY MOTHPO
 PAGE 1 OF 1.

GROUP	COUNT	ROV PCT	ENG	COUN	NON ENG	ROV
	1	2	3	4	5	TOTAL
EXPERIMENTAL 1	16	6	2	1	1	25
	64.0	24.0	8.0	4.0	4.0	29.8
EXPERIMENTAL 2	13	11	6	1	1	31
	41.9	35.5	19.4	3.2	3.2	36.9
EXPERIMENTAL 3	31.7	50.0	54.5	10.0	1.2	
	15.5	13.1	7.1	1.2		
CONTROL	12	5	3	6	8	28
	42.9	17.9	10.7	28.6	28.6	33.3
	29.3	22.7	27.3	80.0	9.5	
	14.3	6.0	3.6	9.5		
COLUMN TOTAL	41	22	11	10	10	84
TOTAL	87.8	26.2	13.1	11.9	107.0	

RAV CHI SQUARE = 16.84712 WITH 6 DEGREES OF FREEDOM, SIGNIFICANCE = .0215
 CRAMER'S V = .29728
 CONTINGENCY COEFFICIENT = .38756
 KENDALL'S TAU B = .21847
 GAMMA = .32280
 SOMERS'S D (ASYMMETRIC) = .21884 WITH GROUP DEPENDENT.
 SOMERS'S D (SYMMETRIC) = .21847
 NUMBER OF MISSING OBSERVATIONS = 13

REPEAT CROSS TABS 16/07/28. PAGE 6

FILE ACF (CREATION DATE = 16/07/28.) ED STUDIES THESIS
..... CROSS TABULATION OF
GROUP ~ EXPER 1,2 OR CONTROL 3 BY MOTHSCI RECODE OF MOTHSCI PAGE 1 OF 1

GROUP	10Y PCT 1	10Y PCT 2	10Y PCT 3	ROW TOTAL
EXPERIMENTAL 1	16	8	0	24
EXPERIMENTAL 2	66.7	33.3	0	28.9
EXPERIMENTAL 3	35.6	26.7	0	
CONTROL	19.3	9.6	0	
TOTAL	11	14	6	31
	37.5	45.2	19.4	37.3
	24.4	46.7	75.0	
	13.3	16.9	7.2	
	18	8	2	28
	64.3	28.6	7.1	33.7
	40.0	26.7	25.0	
	21.7	9.6	2.4	
COLUMN TOTAL	45	30	8	83
	54.2	36.1	9.6	109.0

RAV CHI SQUARE = 9.94080 WITH 4 DEGREES OF FREEDOM. SIGNIFICANCE = .0414
 CRAMER'S V = .24471
 CONTINGENCY COEFFICIENT = .32705
 KENDALL'S TAU B = .01990
 KENDALL'S TAU C = .01829
 GAMMA = .03177
 SCHERER'S D (ASYMMETRIC) = .02154 WITH GROUP DEPENDENT. = .01839 WITH MOTHSCI DEPENDENT.
 SCHERER'S D (SYMMETRIC) = .01984
 NUMBER OF MISSING OBSERVATIONS = 16

REPEAT CROSSTABS

FILE . ACF (CREATION DATE = 76/07/28.) ED STUDIES THESIS

GROUP EXPER 1/2 OR CONTROL 3

CONTROLLING FOR... SEX

BY LRNPR1 RECODE OF LEARNPR

VALUE

1. BOY

76/07/28. PAGE 6

COUNT LRNPR1

ROW	PCT	INONE	YES	ROW	TOTAL
COL PCT 1	1.1	2.1			
TOT PCT 1	14	12		26	
1.	53.8	46.2		45.6	
EXPERIMENTAL 1	24.6	21.1			
2.	8	8		16	
EXPERIMENTAL 2	50.0	50.0		26.1	
	25.8	30.8			
3.	14.0	14.0			
CONTROL	9	6		15	
	60.0	40.0		26.3	
	29.0	23.1			
	15.8	10.5			
COLUMN TOTAL	31	26		57	
TOTAL	54.4	45.6		100.0	

RAO CHI SQUARE = .31769 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = .8531

CRAMER'S V = .07466

CONTINGENCY COEFFICIENT = .07445

KENDALL'S TAU B = -.03485

KENDALL'S TAU C = -.03940

GAMMA = -.06154

SONERS'S D (ASYMMETRIC) = -.03970 WITH GROUP DEPENDENT. = -.03059 WITH LRNPR1 DEPENDENT.

SONERS'S D (SYMMETRIC) = -.03456

REPEAT CROSSTABS (CREATION DATE = 76/07/28.) ED STUDIES THESIS
 FILE ACF CROSSTABULATION OF
 GROUP EXPER 1,2 OR CONTROL 3 BY LRNPR1 RECODE OF LEARNPR
 CONTROLLING FOR: VALUE PAGE 1 OF 1
 SEX 2. GIRL

GROUP	LRNPR1	COUNT	ROW PCT	INONE	YES	TOTAL
EXPERIMENTAL 1	1	1	1.1	2.1	5	13.2
	2	1	1.1	2.1	5	13.2
	3	1	1.1	2.1	5	13.2
EXPERIMENTAL 2	1	7.7	25.0	7.9	15	39.5
	2	5.3	16.5	7.9	15	39.5
	3	8	24.5	7.9	15	39.5
CONTROL	1	53.3	161.1	46.7	18	47.4
	2	30.8	92.4	58.3	18	47.4
	3	21.1	63.3	18.4	18	47.4
TOTAL		26	78.4	31.6	38	100.0

RAW CHI SQUARE = 6.93960 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = .0311
 CRAMER'S V = .42734
 CONTINGENCY COEFFICIENT = .39296
 KENDALL'S TAU B = -.40716
 KENDALL'S TAU C = -.41551
 GAMMA = -.68807
 SOMERS'S D (ASYMMETRIC) = -.48077 WITH GROUP DEPENDENT. = -.34493 WITH LRNPR1 DEPENDENT.
 SOMERS'S D (SYMMETRIC) = -.40161
 NUMBER OF MISSING OBSERVATIONS = 2

REPEAT CROSSTABS

FILE ACP (CREATION DATE = 76/07/27.) ED STUDIES THESIS

GROUP EXPER 1,2 DR CONTROL 3 CROSSTABULATION OF OCCUPATION MOTHER

BY MOTHCC

PAGE 1 OF 1

GROUP	COUNT	MOTHOCC	MANAGERI	CERICAL-	H W	LABOR	OTHER	ROW	TOTAL
TOT PCT	ROW PCT	COL PCT	AL	SALES					
1.	7	1	2	13	0	1	1	24	
EXPERIMENTAL 1	29.2	4.2	8.3	54.2	0	4.2	1	28.9	
	19.4	20.0	20.0	50.0	0	33.3	1		
	8.4	1.2	2.4	15.7	0	1.2	1		
2.	17	2	2	9	0	1	1	31	
EXPERIMENTAL 2	54.8	6.5	6.5	29.0	0	3.2	1	37.3	
	47.2	40.0	20.0	34.6	0	33.3	1		
	20.5	2.4	2.4	10.8	0	1.2	1		
3.	12	2	6	4	1	1	1	28	
CONTROL	42.9	7.1	21.4	14.3	10.7	3.6	1	33.7	
	33.2	40.0	60.0	15.4	100.0	33.3	1		
	14.5	2.4	7.2	4.8	3.6	1.2	1		
COLUMN	36	5	10	26	3	3	3	83	
TOTAL	43.4	6.0	12.0	31.3	3.6	3.6	3.6	100.0	

RAY CHI SQUARE = 17.95984 WITH 10 DEGREES OF FREEDOM, SIGNIFICANCE = .0556
 CRAMER'S V = .32892
 CONTINGENCY COEFFICIENT = .42177
 KENDALL'S TAU B = -.10921
 KENDALL'S TAU C = -.11105
 GAMMA = -.15615
 SOMER'S D (ASYMMETRIC) = -.10683 WITH GROUP DEPENDENT = -.11165 WITH MOTHCC DEPENDENT.
 SOMER'S D (SYMMETRIC) = -.10918
 NUMBER OF MISSING OBSERVATIONS = 14

REPEAT CROSSTABS (CREATION DATE = 76/07/27.) ED STUDIES THESIS

GROUP EXPER 1.2 OR CONTROL.3 CROSSTABULATION OF MOVE RECORDED BY MOVE1 MOVE RECORDED

MOVE1

GROUP	COUNT	PERCENT	UNLIKELY	NO IDEA	TOTAL
EXPERIMENTAL 1	8	16.0	19	4	25
EXPERIMENTAL 2	30	51.6	16	3	31
EXPERIMENTAL 3	7	11.6	20	1	28
CONTROL	25	41.7	36	12	33
TOTAL	55	91.5	55	17	84

RAV CHI SQUARE = 8.84835 WITH 4 DEGREES OF FREEDOM. SIGNIFICANCE = .0650

Cramer's V = .22950

Contingency Coefficient = .30871

Kendall's Tau B = -.17221

Kendall's Tau C = -.16881

Gamma = -.22915

Somers' D (Asymmetric) = -.19853 WITH GROUP DEPENDENT. .14938 WITH MOVE1 DEPENDENT.

Somers' D (Symmetric) = -.17048

NUMBER OF MISSING OBSERVATIONS = 13

REPEAT CROSSTABS

FILE ACFF (CREATION DATE = 76/07/27.) ED STUDIES THESIS

76/07/27. PAGE 14

GROUP EXPER 1,2 OR CONTROL 3 BY RAVENSI RAVENS1 RAVENS2 RAVENS3 RAVENS4 RAVENS5 RAVENS6 RAVENS7 RAVENS8 RAVENS9 RAVENS10 RAVENS11 RAVENS12 RAVENS13 RAVENS14 RAVENS15 RAVENS16 RAVENS17 RAVENS18 RAVENS19 RAVENS20 RAVENS21 RAVENS22 RAVENS23 RAVENS24 RAVENS25 RAVENS26 RAVENS27 RAVENS28 RAVENS29 RAVENS30 RAVENS31 RAVENS32 RAVENS33 RAVENS34 RAVENS35 RAVENS36 RAVENS37 RAVENS38 RAVENS39 RAVENS40 RAVENS41 RAVENS42 RAVENS43 RAVENS44 RAVENS45 RAVENS46 RAVENS47 RAVENS48 RAVENS49 RAVENS50 RAVENS51 RAVENS52 RAVENS53 RAVENS54 RAVENS55 RAVENS56 RAVENS57 RAVENS58 RAVENS59 RAVENS60 RAVENS61 RAVENS62 RAVENS63 RAVENS64 RAVENS65 RAVENS66 RAVENS67 RAVENS68 RAVENS69 RAVENS70 RAVENS71 RAVENS72 RAVENS73 RAVENS74 RAVENS75 RAVENS76 RAVENS77 RAVENS78 RAVENS79 RAVENS80 RAVENS81 RAVENS82 RAVENS83 RAVENS84 RAVENS85 RAVENS86 RAVENS87 RAVENS88 RAVENS89 RAVENS90 RAVENS91 RAVENS92 RAVENS93 RAVENS94 RAVENS95 RAVENS96 RAVENS97 RAVENS98 RAVENS99 RAVENS100

COUNT I
 ROW PCT I TO 5TH P TO 10TH TO 25TH TO 50TH TO 75TH TO 90TH TO 95TH ROW TOTAL

GROUP	101 PCT	10	21	31	41	51	61	71	81	91	TOTAL
EXPERIMENTAL 1	1	1	4	14	6	5	0	0	0	0	31
	3.2	12.9	45.2	19.4	16.1	0	0	0	0	0	33.3
	50.0	40.0	63.6	25.0	25.0	0	0	0	0	0	33.3
	1.1	4.3	15.1	6.5	5.4	0	0	0	0	0	33.3
EXPERIMENTAL 2	0	0	4	6	6	8	6	6	6	6	30
	0	13.3	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	32.3
	0	40.0	27.3	25.0	40.0	46.2	46.2	46.2	46.2	46.2	32.3
	0	4.3	6.5	6.5	8.6	8.6	8.6	8.6	8.6	8.6	32.3
CONTROL	1	3.1	6.3	12.6	12.6	12.6	12.6	12.6	12.6	12.6	32
	50.0	50.0	20.0	9.1	50.0	35.0	55.8	55.8	55.8	55.8	34.4
	1.1	1.1	2.2	2.2	12.9	7.5	7.5	7.5	7.5	7.5	32
	2	10	22	24	20	13	13	13	13	13	93
COLUMN TOTAL	2	2	10	22	24	20	13	13	13	13	100.0
	2.2	10.8	23.7	25.8	21.5	14.0	10.0	10.0	10.0	10.0	100.0

RAVENSI

RAW CHI SQUARE = 23.07391 WITH 12 DEGREES OF FREEDOM. SIGNIFICANCE = .0271

CHAMERUS V = .35221

CONTINGENCY COEFFICIENT = .44585

KENDALL'S TAU B = .27662

KENDALL'S TAU C = .30281

GAMMA = .36820

SOMERS'S D (ASYMMETRIC) = .25260 WITH GROUP DEPENDENT. = .30291 WITH RAVENSI DEPENDENT.

SOMERS'S D (SYMMETRIC) = .25548

NUMBER OF MISSING OBSERVATIONS = 4

REPEAT CROSSTABS FILE ACF (CREATION DATE = 76/07/27.) ED STUDIES THESIS 76/07/27. PAGE 15

GROUP EXPER 1,2 OR CONTROL 3 CROSSTABULATION OF ESTIMAT YRS SCHOOL CHILD BY TOTALSCH ESTIMAT YRS SCHOOL CHILD PAGE 1 OF 1

GROUP	TOTALSCH	19.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	ROW TOTAL
EXPERIMENTAL 1	3	1	5	12	0	1	0	0	0	25
	12.0	4.0	20.0	48.0	0	4.0	0	0	0	30.9
EXPERIMENTAL 2	3	1	6.2	14.8	0	1.2	0	0	0	29
	12.0	4.0	27.8	36.4	0	59.8	0	0	0	35.8
CONTROL	4	2	10.3	51.7	6.9	3.4	0	10.3	3.4	33.3
	12.0	4.0	16.7	45.5	40.0	50.0	0	100.0	100.0	100.0
COLUMN TOTAL	15	13.1	33.7	18.5	2.5	1.2	0	3.7	1.2	61
TOTAL	31	22.2	40.7	0.2	2.5	3.7	1.2	3.7	1.2	100.0

GROUP	TOTALSCH	27.1	0	0	0	0	0	0	0	ROW TOTAL
EXPERIMENTAL 1	0	0	0	0	0	0	0	0	0	25
	12.0	4.0	20.0	48.0	0	4.0	0	0	0	30.9
EXPERIMENTAL 2	0	0	0	0	0	0	0	0	0	29
	12.0	4.0	27.8	36.4	0	59.8	0	0	0	35.8
CONTROL	1	1	10.3	51.7	6.9	3.4	0	10.3	3.4	33.3
	12.0	4.0	16.7	45.5	40.0	50.0	0	100.0	100.0	100.0
COLUMN TOTAL	15	13.1	33.7	18.5	2.5	1.2	0	3.7	1.2	61
TOTAL	31	22.2	40.7	0.2	2.5	3.7	1.2	3.7	1.2	100.0

ROW CHI SQUARE = 31.60898 WITH 20 DEGREES OF FREEDOM. SIGNIFICANCE = .0476

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REPEAT CROSSTABS

GRAHER'S V = .44172
CONTINGENCY COEFFICIENT = .52981
KENDALL'S TAU B = .02097
KENDALL'S TAU C = .02281

GAMMA = .02964
SOMERS'S D (ASYMMETRIC) = .01959 WITH GROUP DEPENDENT. = .02245 WITH TOTALSCH DEPENDENT.
SOMERS'S D (SYMMETRIC) = .02092
NUMBER OF MISSING OBSERVATIONS = 16

REPEAT CROSSTABS
 FILE ACP (CREATION DATE = 76/07/27.) ED STUDIES-THESIS
 GROUP EXPER 1,2 OR CONTROL 3 BY BILWISH BILINGUAL WISHES FOR CH

GROUP	COUNT	ROW PCT	COL PCT	IBALANCED	GET ALON	IN STORE	EMERG	FEW WORD	5 IF NEC	ROW
										TOTAL
EXPERIMENTAL 1	9	36.0	17.6	12	48.0	55.0	100.0	4.0	0	29.6
EXPERIMENTAL 2	19	51.3	10.7	9	29.0	3.6	1.2	0	1	31
CONTROL	23	82.1	27.4	14.3	16.0	3.6	1.2	0	0	33.3
TOTAL	51	100.0	100.0	25	29.8	7.1	1.2	1.2	1.2	100.0

RAV CHI SQUARE = 15.10347 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = .0572
 CRAMER'S V = .2994
 CONTINGENCY COEFFICIENT = .39039
 KENDALL'S TAU B = -.33544
 KENDALL'S TAU C = -.33060
 GAMMA = .53458
 SOMERS'S D (ASYMMETRIC) = .37289 WITH GROUP DEPENDENT. = .30175 WITH BILWISH DEPENDENT.
 SOMERS'S D (SYMMETRIC) = .33357
 NUMBER OF MISSING OBSERVATIONS = 13

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REPEAT CROSSTABS

FILE AC (CREATION DATE = 76/07/27.) ED STUDIES THESIS

GROUP EXPER 1,2 OR CONTROL 3 CROSSTABULATION OF PLANS GRADE 7 PLANS BY PLANS GRADE 7 PLANS

PLANS

GROUP	COUNT		ROW PCT		COL PCT		PRIV SCH BOARDING FR PUB H OR 7 IMM DONT KNO OTHER		ROW TOTAL
	EXPER 1	EXPER 2	EXPER 1	EXPER 2	EXPER 1	EXPER 2	FR	W	
EXPERIMENTAL 1	5	9	20.0	36.0	41.7	42.9	0	0	25
EXPERIMENTAL 2	6	11	25.0	42.9	6.1	11.0	0	0	30.5
CONTROL	3	9	12.0	36.0	3.1	11.0	0	0	30
TOTAL	14	21	57.0	114.0	50.9	64.9	0	0	100.0

RAW CHI SQUARE = 26.01953 WITH 12 DEGREES OF FREEDOM, SIGNIFICANCE = .0107
 CRAMER'S V = .39832
 CONTINGENCY COEFFICIENT = .49079
 KENDALL'S TAU B = .10199
 KENDALL'S TAU C = .10574
 GAMMA = .14149
 SOMERS'S D (ASYMMETRIC) = .09810 WITH GROUP DEPENDENT = .10606 WITH PLANS DEPENDENT
 SOMERS'S D (SYMMETRIC) = .10191
 NUMBER OF MISSING OBSERVATIONS = 15

REPEAT CROSSTABS. FILE ACP (CREATION DATE = 76/07/27.) ED STUDIES THESIS PAGE 19

GROUP EXPER 1,2 OR CONTROL 3 BY LEARNPR RATING FOR L P PAGE 1 OF 1

GROUP	LEARNPR	1	2	3	4	5	6	7	SEVERED	ROW TOTAL
EXPERIMENTAL 1	COUNT	12	4	3	9	1	0	2	31	
	ROW PCT	38.7	12.9	9.7	29.0	3.2	0	6.5	32.6	
	COL PCT	24.5	50.0	25.0	56.3	33.3	0	66.7		
	TOT PCT	12.6	4.2	3.2	9.5	1.1	0	2.1		
EXPERIMENTAL 2	COUNT	15	1	8	4	0	2	1	31	
	ROW PCT	48.4	3.2	25.8	12.9	0	6.5	3.2	32.6	
	COL PCT	30.6	12.5	66.7	25.0	0	50.0	33.3		
	TOT PCT	15.8	1.1	8.4	4.2	0	2.1	1.1		
CONTROL	COUNT	22	3	1	3	2	2	0	33	
	ROW PCT	66.7	9.1	3.0	9.1	6.1	5.1	0	36.7	
	COL PCT	44.9	37.5	8.3	18.8	66.7	50.0	0		
	TOT PCT	23.2	3.2	1.1	3.2	2.1	2.1	0		
COLUMN TOTAL	49	8	12	16	3	4	3	95		
TOTAL	51.6	8.4	12.6	16.8	3.2	4.2	3.2	100.0		

RAW CHI SQUARE = 21.25483 WITH 12 DEGREES OF FREEDOM, SIGNIFICANCE = .0468
 CRAMER'S V = .33447
 CONTINGENCY COEFFICIENT = .42759
 KENDALL'S TAU B = -.18254
 KENDALL'S TAU C = -.18410

GAMMA = .26431
 SOMERS'S D (ASYMMETRIC) = -.18087 WITH GROUP DEPENDENT.
 SOMERS'S D (SYMMETRIC) = -.18254
 NUMBER OF MISSING OBSERVATIONS = 2

REPEAT CROSSTABS

FILE ACP (CREATION DATE = 76/07/27.) ED STUDIES THESIS

GROUP EXPER 1,2 OR CONTROL 3 CROSS-TABULATION OF PRIMARY REASON FOR MOVE

BY REASON

PROGRESS PRINTS AG LEARN DI STRAIN O OTHER

CONCERN AINST F SABILITY N CH

REASON

COUNT I

ROW PCT IACADEMIC TEACHER

COL PCT IACADEMIC TEACHER

TOT PCT I

EXPERIMENTAL 1

31.6

100.0

31.6

100.0

100.0

100.0

100.0

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T-test: Grades 5 & 6 combined (achievement)

FILE ACF		(CREATION DATE = 76/08/23.)		ED STUDIES THESIS		T - T E S T					
GROUP 1 - GCUP	EQ	1.	STANDARD	STANDARD	POOLED VARIANCE ESTIMATE	SEPARATE VARIANCE ESTIMATE	T	DEGREES OF	T	DEGREES OF	
GROUP 2 - GCUP	EQ	2.	DEVIATION	DEVIATION	ESTIMATE	ESTIMATE	VALUE	FREEDOM	VALUE	FREEDOM	
VARIABLE	NUMBER	MEAN	ERROR	ERROR	PROB.	PROB.	PROB.	PROB.	PROB.	PROB.	
	OF CASES										
MATHS READING RAW SCORE											
GROUP 1	23	31.6957	7.678	1.601	1.40	.432	-1.58	53	-1.62	51.55	.111
GROUP 2	32	35.3750	9.097	1.600							
MATHS MATH RAW SCORE											
GROUP 1	23	24.7826	4.880	1.018	1.35	.474	-2.65	53	-2.71	51.17	.009
GROUP 2	32	25.6563	5.660	1.001							
MATHS READING RAW SCORE											
GROUP 1	23	31.6957	7.678	1.601	1.21	.687	-1.95	53	-1.98	50.00	.053
GROUP 2	32	36.0313	8.430	1.490							
MATHS MATH RAW SCORE											
GROUP 1	23	24.7826	4.880	1.018	1.50	.325	-2.59	53	-2.68	52.07	.010
GROUP 2	32	25.7188	5.980	1.057							
MATHS READING RAW SCORE											
GROUP 1	32	35.3750	9.097	1.608	1.16	.674	-0.30	62	-0.30	61.64	.766
GROUP 2	32	36.0313	8.430	1.490							
MATHS MATH RAW SCORE											
GROUP 1	32	25.6563	5.660	1.001	1.12	.762	-0.04	62	-0.04	61.81	.966
GROUP 2	32	25.7188	5.980	1.057							

T-test Grade Five and Six Combined

FILE ACF (CREATION DATE = 76/09/10.) ED STUDIES THESIS 576

GROUP 1 - GROUP 2		1. 2.		T - T E S T		* POOLED VARIANCE ESTIMATE * SEPARATE VARIANCE ESTIMATE			
VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
HAVENS	100. PERCENTILE								
GROUP 1	J1	50.0968	24.412	4.385	1.10	.798	-2.39	59	.020
GROUP 2	J0	65.4000	25.589	4.672					58.62
GROUP 1 - GROUP 2	EQ	1.							
GROUP 2 - GROUP 1	EQ	3.							
GROUP 1 - GROUP 2		1. 2.		T - T E S T		* POOLED VARIANCE ESTIMATE * SEPARATE VARIANCE ESTIMATE			
VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
HAVENS	100. PERCENTILE								
GROUP 1	J1	50.0968	24.412	4.385	1.19	.630	-2.83	61	.006
GROUP 2	J2	68.3125	26.666	4.714					60.81
GROUP 1 - GROUP 2	EQ	2.							
GROUP 2 - GROUP 1	EQ	3.							
GROUP 1 - GROUP 2		1. 2.		T - T E S T		* POOLED VARIANCE ESTIMATE * SEPARATE VARIANCE ESTIMATE			
VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
HAVENS	100. PERCENTILE								
GROUP 1	J0	65.4000	25.589	4.672	1.09	.826	-2.44	60	.663
GROUP 2	J2	68.3125	26.666	4.714					59.96
GROUP 1 - GROUP 2	EQ	1.							
GROUP 2 - GROUP 1	EQ	3.							

FILE ACF (CREATION DATE = 76/09/10.) ED STUDIES THESIS 5

T - I E S T

GROUP 1 - GROUP EQ		1.		POOLED VARIANCE ESTIMATE		SEPARATE VARIANCE ESTIMATE	
GROUP 2 - GROUP EQ		2.					
VARIABLE	NUMBER OF CASES	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM
RAVENS	15	21.875	5.648	1.91	.621	-1.76	28
GROUP 1	53.9333						
GROUP 2	69.0000	25.029	6.462			-1.76	28
GROUP 1 - GROUP EQ	1.						
GROUP 2 - GROUP EQ	3.						

GROUP 1 - GROUP EQ		2.		POOLED VARIANCE ESTIMATE		SEPARATE VARIANCE ESTIMATE	
GROUP 2 - GROUP EQ		3.					
VARIABLE	NUMBER OF CASES	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM
RAVENS	15	21.875	5.648	1.29	.644	-2.61	28
GROUP 1	53.9333						
GROUP 2	76.2000	24.811	6.406			-2.61	28
GROUP 1 - GROUP EQ	2.						
GROUP 2 - GROUP EQ	3.						

GROUP 1 - GROUP EQ		3.		POOLED VARIANCE ESTIMATE		SEPARATE VARIANCE ESTIMATE	
GROUP 2 - GROUP EQ		4.					
VARIABLE	NUMBER OF CASES	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM
RAVENS	15	25.029	6.462	1.02	.974	-1.79	28
GROUP 1	69.0000						
GROUP 2	76.2000	24.811	6.406			-1.79	28
GROUP 1 - GROUP EQ	3.						
GROUP 2 - GROUP EQ	4.						