

## **KATIVIK INITIATED RESEARCH: THE BASIS FOR INFORMED DECISION MAKING**

The Kativik school board faces a major challenge as the primary institution responsible for preparing the young people of Nunavik to face the 21st century. Its dual mandate requires that it ensure the promotion of Inuit values, but that simultaneously students receive an education that will allow them to participate fully in mainstream society (Annual report, KSB, 1985). This challenge is exacerbated by two additional facts: 1) the Kativik school board is a recent institution, only becoming a reality in 1976; and 2) it is responsible for meeting the needs of young people most of whose parents have had little experience with formal education.

Because of this challenging reality, the school board cannot merely borrow mainstream programs and apply them to education in Nunavik. The board has made (and must continue to make) wise use of carefully researched programs from different regions of Canada and around the world; selecting programs designed for groups who, like the Inuit of Nunavik, face the challenge of educating minority students whose first language is other than that of the mainstream. In the area of language of instruction, the school board chose a form of bilingual education that was designed to insure that students would not only become knowledgeable in content subjects, but would also achieve fluency in English or French as well as in Inuttitut. However, this required that school programs and materials be provided in three languages. Generating programs in English or French was made manageable by the fact that English and French curricula, materials and well trained teachers exist in abundance. Although many of these resources had to be modified in order to be applied to the particular conditions in Nunavik, the basic resources were there. Far more challenging was finding and training fully qualified Inuit teachers, as well as developing programs and materials in Inuttitut. Initially, these resources were not merely lacking, they were non-existent.

Not surprisingly, the school board has committed much of its resources to training teachers, administrators, and education specialists, as well as preparing materials in Inuttitut. The result is a genuine form of bilingual education whereby in the early grades, usually K through Grade 2, students are taught in Inuttitut by Inuit instructors. From Grade 3 onwards, students select either a French or English stream until the end of secondary school. At each grade level, a modest amount of time is set aside for instruction in Inuttitut and for Inuit culture.

The current bilingual program is properly informed by international research in the field of bilingual education (see August & Garcia, 1988; Crawford, 1989; Cummins, 1981; 1989; Cummins & Swain, 1986; Genesee, 1987; Holm & Holm, 1990; Skutnabb-Kangas, 1981; Taylor, 1990) and is

consistent with the Kativik School Board's dual mandate (maintaining Inuit heritage language and culture, while preparing children to participate in mainstream society). Recognizing this significant achievement, the Board is now in a position to turn its attention to the ultimate question -- Is the program serving the needs of the students in Nunavik?

As the Kativik School Board has been designing and implementing its bilingual program, there have been new developments internationally in the understanding of bilingual education. Also, of greater importance, while international models can serve as a guideline, the ultimate test of a program's effectiveness is its impact on the very students it is designed to serve -- the students of Nunavik.

In order to put their own policy and programs to this test, and with a willingness to expose themselves to public accountability, the Board instigated a program of research designed to answer the question of its own effectiveness. To date, numerous rigorous scientific surveys and studies have been conducted. Each of these research projects resulted in a detailed scientific report coupled with an executive summary so that information could be disseminated to the entire community (see Ruggiero, Taylor, Aitchison, Wright, 1995; Taylor & Wright, 1989; Taylor, Wright & Aitchison, 1991; Taylor, Wright Ruggiero & Aitchison, 1993; Wright & Taylor, 1995; Wright & Taylor, 1996; Wright, Taylor, Ruggiero & Macarthur, 1996).

While each of these reports has allowed policy makers and program designers to better meet the needs of students, there is a pressing need to bring the numerous projects together into an integrated profile. Such an integration of all the projects is paramount because their full significance cannot be appreciated when they are disseminated one at a time over a period of several years.

The present integrated summary addresses four fundamental issues:

- 1) Since so many native languages have been lost forever, what is the current status of Inuttitut in Nunavik?
- 2) What is the intellectual potential of students in Nunavik?
- 3) How is the current bilingual format in Nunavik effecting the language learning of the students?
- 4) How does the current bilingual format in Nunavik impact the self-esteem of students?

These four issues will be addressed in four separate sections. In each section, the issue will be described, a brief overview of the research methodology will be given, the actual results will be presented, and finally the implications of these results will be discussed and several conclusion drawn. In a final section, the current bilingual program in Nunavik will be critically analyzed with a view to shaping future policy.

## **THE CURRENT STATUS OF INUTTITUT IN NUNAVIK**

Schools do not operate in a vacuum; they are both impacted by, and impact on, the surrounding community. The issue of language is critical to Nunavik. The stark reality is that the indigenous languages of Native people have all but disappeared in Canada, the United States, and indeed around the world (Aikio, 1990; Foster, 1984, Priest, 1985). For example, in Canada there are at least 83 distinguishable native groups each with its own precious language. Already, 80 of these languages have disappeared or are on the verge of extinction. The three languages judged to be "healthy" are Cree, Ojibaway, and Inuttitut. However, even these supposedly healthy languages are genuinely endangered. The Cree and Ojibaway languages are only spoken by approximately one-half of their people (Foster, 1984, Priest, 1985). And, Inuttitut is by no means immune from the threat of extinction. In Alaska and the Western Arctic, the language of the Inuit has been largely replaced by English (Bergsland, 1990; Dorais, 1989; Kaplan, 1990)

If the experience of other indigenous languages in North America can be used as an example, Inuttitut is fighting for its very survival. Any school policy must be made in the context of this possibility. Also, in order for policies and programs to be properly implemented and truly effective, the school board must know how each fits with the general perceptions and beliefs of the communities. Therefore, decisions about school policy must be informed by the actual language situation in the community, and with an understanding of the wishes of the community with respect to the future of Inuttitut and the role the school should play with respect to language. With this in mind, the first series of research studies was initiated. Specifically, formal surveys were conducted, first in Kuujjuaq, followed by similar, but not identical, surveys in Inukjuak, Quaqaq, Kuujjuaraapik, and Akulivik (see Ruggiero, Taylor, Aitchison, Wright, 1995; Taylor & Wright, 1989; Taylor, Wright & Aitchison, 1991). The focus of the questions in these surveys was on respondents' ability to function in Inuttitut, French and English as well as their views on the status, importance, and future of these three languages in their community. As well, respondents were asked about the role that the school should play in developing fluency and literacy in the three languages.

### **RESEARCH METHODOLOGY**

When social scientists conduct community-based surveys they strive to have a 10% randomly chosen sample of adults in the community complete the survey instrument. The language surveys conducted in Nunavik far exceeded these sampling objectives with from 73% to 90% of the population of different communities agreeing to complete the research instrument.

In each community, questionnaires were distributed to all members of the community who were above the age of fourteen and who were long-term residents. Complete written instructions accompanied the questionnaire and these were repeated often in Inuttitut, French and English using

the FM radio station that serves the community. In addition, trained Anglophone, Francophone and Inuttitut interviewers were made available to answer questions or help respondents complete the questionnaire.

The questionnaire was designed to ensure that everyone in the community could voice their opinion equally, and in as unbiased a manner as possible. First, all questions were posed in a simple and straight-forward manner; no attempt was made to disguise the purpose of the questionnaire. Second, questions were translated into the three languages using a back-translation procedure (Brislin, 1970), and respondents could complete the questionnaire in the language or languages of their choice. Third, all questions were answered by the respondent using a standard response format. For this purpose, an 11-point scale was used. The points on the scale were labeled at the extremes with phrases such as "strongly disagree (0) and "strongly agree (10), and the intermediate points on the scales were also labeled as a guide for respondents. Respondents then circled a number on the scale to indicate their opinion. Fourth, the questionnaires were completed in the privacy of people's own homes and were completely anonymous. Thus, people had time to consider their response to each question, and they could feel free to answer the questions honestly and directly.

This format served three important functions. First, it allowed all respondents to answer in a standard manner ensuring that each person's answers were given equal weight. Second, the 11-point scales allowed respondents to express shades of opinion. Thus, the person did not have to answer "yes" or "no," but could give partial support for an idea or indicate a mild or even weak opinion on the issue. Third, the use of an 11-point scale provided answers that were quantified as numbers. This allowed for the use of powerful inferential statistics in order to capture the subtleties as well as the general trends in of respondents' opinions.

## **RESULTS**

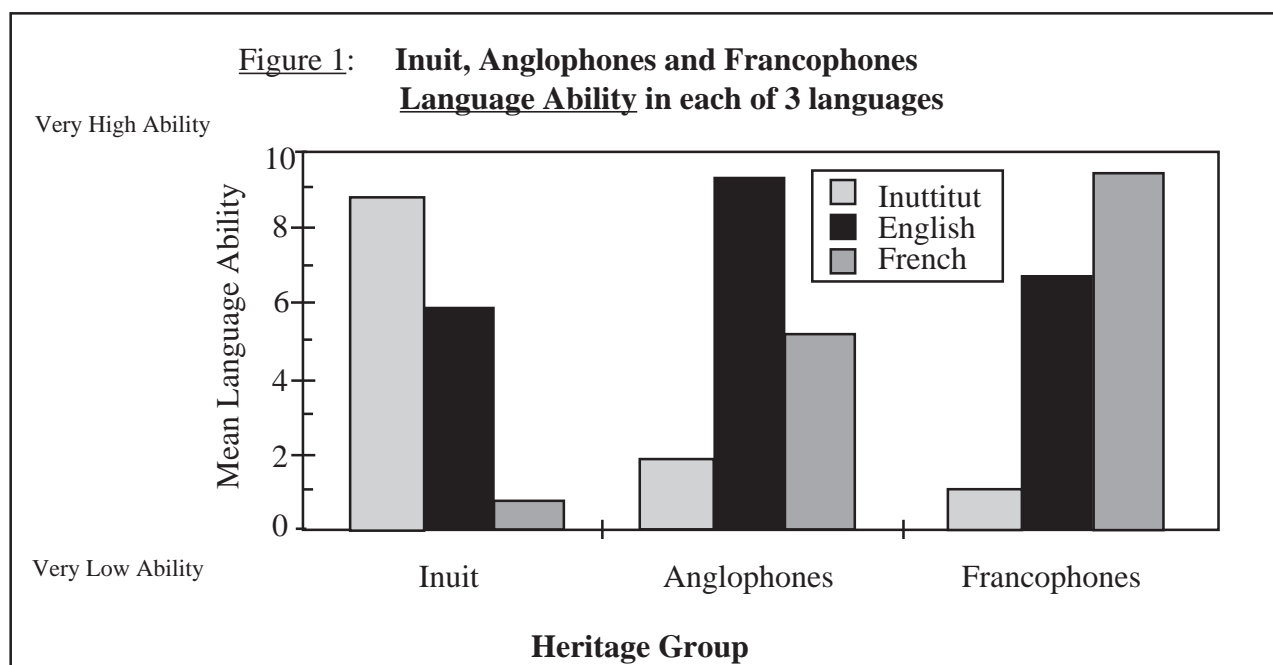
Analyses of variance and regression procedures were the statistical methods applied to the data in each community. Despite some variation from community to community, the results were surprisingly similar. Thus, the notion that the language situation is very different in larger communities compared to smaller communities seems unfounded.

### **Language Fluency and Use**

The first important finding is that Inuttitut is clearly the strongest language in all communities. This general finding confirms what anyone living in Nunavik can easily observe. However, the survey also points out certain important subtleties. First, people are far more fluent than literate in Inuttitut. That is, people speak and understand Inuttitut far better than they can read and write Inuttitut. That is true in most languages, but the difference in the case of Inuttitut in Nunavik is quite large,

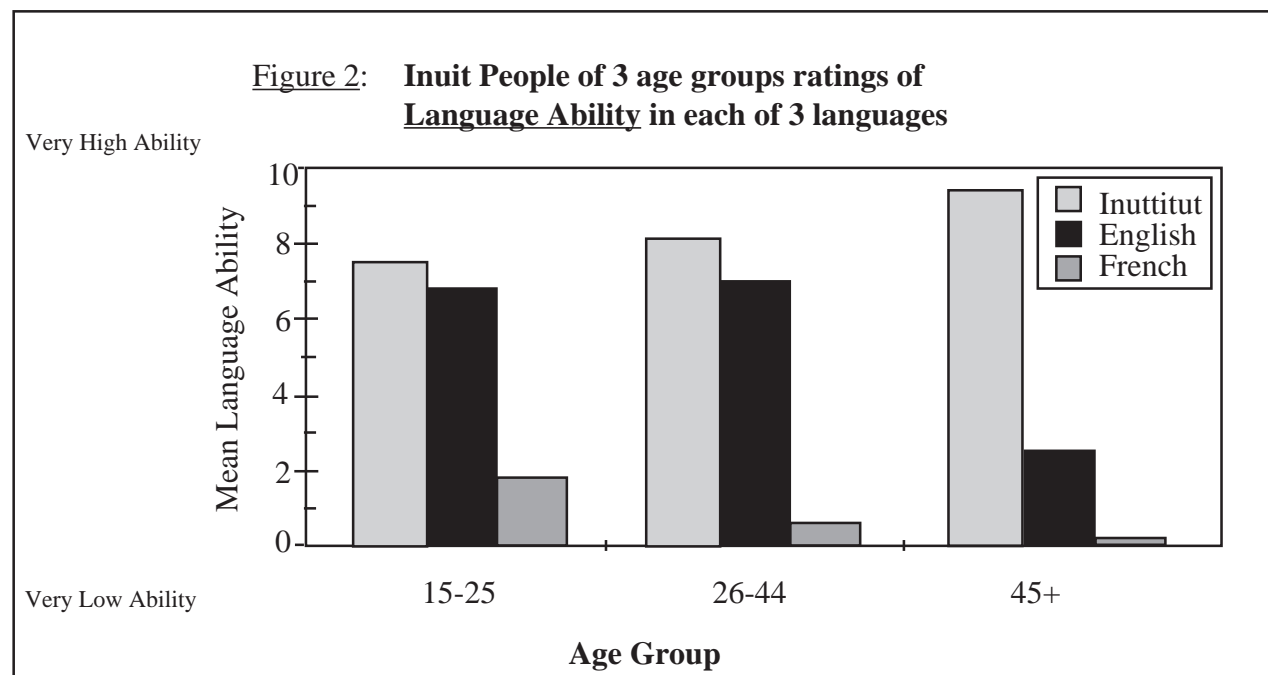
suggesting that literacy skills will need to be improved if Inuttitut is to achieve a status that will allow it to compete with mainstream languages like English and French.

A second feature of the results is the pivotal position of the English language. As Figure 1 shows, while Inuttitut is clearly the strongest language among Inuit people in the communities, some ability in English is nevertheless widespread. Moreover, it is clear from the results that Anglophone (English-speakers) and Francophone (French-speakers) residents of Nunavik are not at all fluent in Inuttitut. In fact, most claimed to have very little or no ability in Inuttitut. However, Francophones have some fluency in English. The result is that English emerges at the "link language" in the community. It is the mother tongue of Anglophones and the preferred second language for both Francophones and Inuit. This gives English a dominant position, because it serves as the lingua franca—the one language that everyone can use to communicate. So, as you can see in Figure 1, while Inuttitut is the strongest language among Inuit, English is the link language in the community.



Despite the strength of Inuttitut in the communities, then, English has gained a strong foothold as the lingua franca. And, there is more evidence that the status of Inuttitut is under threat from English and, to a lesser extent, from French. An examination of the language abilities of Inuit of different ages reveals a disquieting profile. As one can see in Figure 2, Inuit over the age of 45 are extremely fluent in Inuttitut and their English skills are limited. By contrast, those between 25 and 44 years of age are less fluent in Inuttitut and far more fluent in English. And, this pattern of increased fluency in English at the expense of ability in Inuttitut is most pronounced for the youngest group of Inuit--those less than 25 years of age. What seems to be emerging are the first signs of a "subtractive" form of bilingualism

(Lambert, 1977; Lambert & Taylor, 1983; Taylor, Meynard, & Rheault, 1977). That is, as people become more fluent in English, there is a corresponding drop in their ability in Inuttitut. This, of course, raises the painful question of "How long before English, or French, comes to totally replace Inuttitut?"



Further evidence for the growing power of English, and to some extent French, is found in respondents' reports of which language they use in different situations. While hunting and fishing, Inuttitut is completely dominant. However, when it comes to the work environment there is a sharp increase in the use of English and French with a corresponding drop in the use of Inuttitut. Given the ever increasing importance of the work place in the lives of young Inuit, this also points to the growing power of English and French to serve as a replacement for Inuttitut.

Finally, the mass media (television, southern radio, videos, and the computer internet) which now reaches almost every home in Nunavik, is dominated by English. This is especially true for television which our respondents report watching an average of seven hours a day.

In summary, while the heritage language, Inuttitut, is vibrant and functional among the Inuit of Nunavik, it is under pressure from English and, to a lesser extent, French. English is the default lingua franca, it is the dominant language in the mass media, and it is fast becoming the language of the young and the language used on the job. The challenge is straightforward. Dramatic steps will be needed to protect the strength of Inuttitut, or it will become extinct as has happened to so many native languages.

## **Language Attitudes and the Role of the School.**

The results of the language surveys make it very clear that people in the community believe that the school must play an active role in the protection and propagation of Inuttitut. Most respondents do not see the home as the only place where Inuttitut is learned. They believe that the school should be an equal partner in the process. That is, the school cannot simply ignore Inuttitut and expect that it will be learned in the children's homes or in the community. On the other hand, the school cannot simply eliminate all instruction in English or French, since these languages are necessary in order to prepare young people for participation in mainstream society.

What this means is that the school is being challenged with the task of taking a "subtractive bilingualism" situation and replacing it with "additive bilingualism". Thus, the school must pursue its responsibility for protecting Inuttitut in such a way that as students progress in Inuttitut it actually helps them become more fluent in English, and as they acquire more English it actually serves to improve their Inuttitut. This would create a truly additive form of bilingualism, since progress in one language adds to skills in the other. Compare this to the current situation where increased fluency in English is accompanied by less use of and lower fluency in Inuttitut.

In summary, the community-based language surveys provide vital information from which to set school policy and programs. The research makes the school board's challenge clear: it must develop programs that create an additive bilingual setting where students become skilled in both their heritage language and at least one of English and/or French, while at the same time they must be successful in mastering the course content.

## **THE INTELLECTUAL POTENTIAL OF INUIT STUDENTS**

It is no secret that Native students in general, and Inuit students in particular, do not perform well at school (Duffy, 1988; Frideres, 1988; Rampaul, Singh & Didyk, 1984; Robitaille and Choinière, 1985; United States Department of Education, 1987). Parents in Nunavik are well aware of their children's academic underachievement. They see how few of their young people graduate from Secondary V. They are aware of the number of dropouts. And, they know that even those few who do pursue a mainstream education at the college level rarely succeed. What the parents don't see is the underachievement of students even when they are in school and apparently attending regularly.

This discouraging reality had led some parents and educators to question the intellectual capacity of the students. Slowly, quietly people begin to accept the stereotype that Inuit children (or Native children more generally) do not have the intelligence to be successful at academics. The more people come to believe this stereotype, the more they will give up on their children and their students.

The only solution is to formally test the students; to attempt to determine if there is any truth to this stereotype. The problem is that the only scientifically valid tests are those that have been developed for mainstream students. Naturally, such tests are biased against Inuit students. And, the bias is not only in terms of the language that the test is in, or cultural biases in the content of the test questions, but also in terms of the form of the test itself. Mainstream students are accustomed to being formally tested from a very young age. For Inuit students, such formal tests are a novel experience (Crago, 1992; Crago, Annahatak & Ningiuruvik, 1993). Like any other skill, this practice with formal test taking gives mainstream students an advantage that has nothing to do with their underlying intellectual ability.

Despite formal testing with mainstream instruments placing Inuit students at a disadvantage, the decision was made to formally test students and to compare their performance with mainstream students of the same age, and in the same grade. The particular test chosen was the Raven Coloured Progressive Matrices. This is a standardized test purported to be a valid measure of Analytic Intelligence (Carpenter, Just, & Snell, 1990; Raven, Raven & Court, 1993). It was chosen because it is arguably the most culturally unbiased test of all the available standard intelligence tests (Raven, Court & Raven, 1990).

### **Research Methodology**

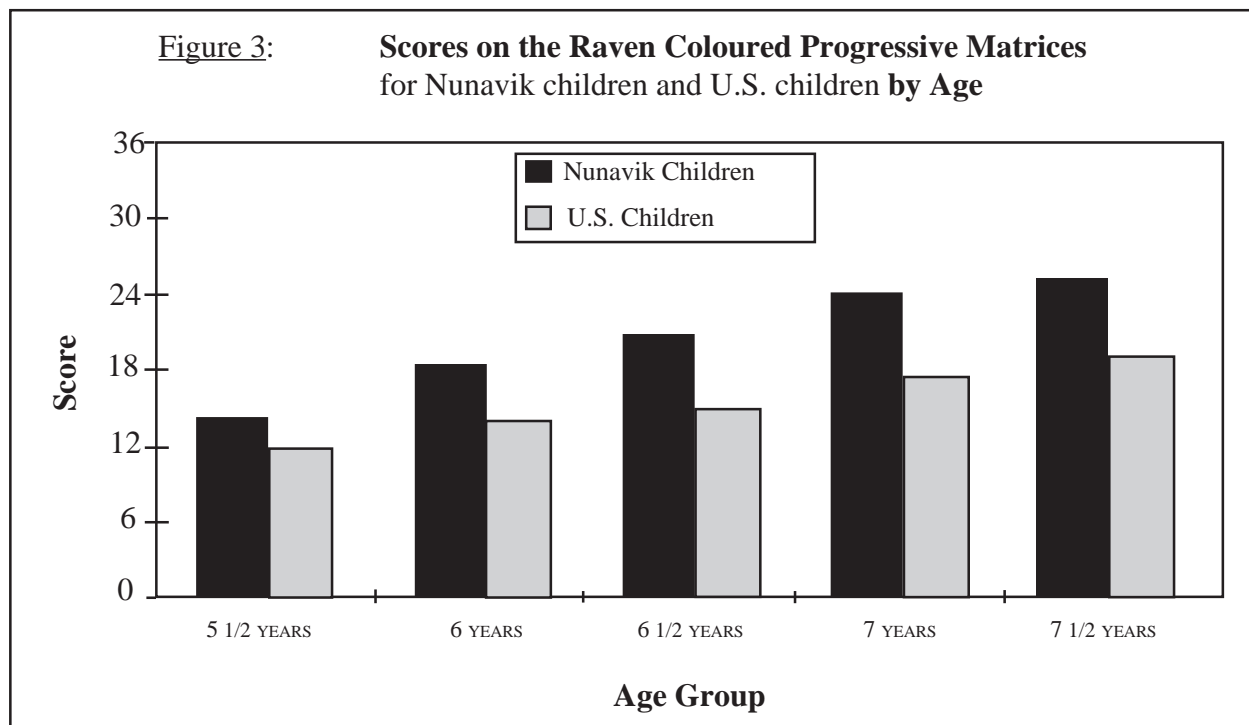
Over a period of several years, students in Kindergarten, Grade 1, and Grade 2 were administered the test. Because no valid conclusions can be drawn from a small sample of children, several years of testing were required in order to ensure that a large number of children could be tested. The test was administered to each child individually in a quiet location outside of the classroom. The original English instructions were translated into French and Inuttitut and were administered in the child's first language by an experienced co-ethnic tester.

The test involves 36 separate problems that are presented to the child one at a time. In each problem, the child is presented with a board containing a design pattern with a piece missing. The child is required to choose the missing piece from an array of six possibilities. The first few problems are relatively simple, but the problems become increasingly difficult and soon require high levels of analytic intelligence.

### **Results**

The performance of the children from Nunavik were put to the most challenging test. They were compared to children in the United States (Raven, 1990), children from across Canada, and children from southern regions of Quebec (Ionescu, Jourdan-Ionescu, Alain, Rousseau & Inostroza, 1992).

Despite their lack of experience with formal test-taking, the children from Nunavik scored equal to, and in some cases better than, children of the same age from across the United States and Canada. As one can see in Figure 3, when compared to U.S. children, The Nunavik children score higher at every age level. These results are very impressive given that formal tests are biased in favour of white, urban, children for whom the tests were originally designed.



These results lay to rest any stereotypes about the intellectual potential of Inuit children. They clearly have the underlying analytic intelligence necessary to successfully master school material. The implication is that to address the underachievement of Inuit students what is really needed is a firm commitment from parents, community leaders, and educators. The children are capable of achieving at high levels; they just need support and appropriate types of classroom experiences that will allow them to be successful.

### **AN EVALUATION OF BILINGUAL EDUCATION IN NUNAVIK**

For most communities in Nunavik, children receive instruction for Kindergarten, Grade 1 and Grade 2 in Inuttitut. Beginning in Grade 3, parents must choose either a French or English stream for their children to follow through to Secondary V. Three arguments underlie the rationale for a bilingual program whereby students spend their early years in school learning in Inuttitut. First, the students will benefit academically from learning in the language with which they are most familiar (Cummins, 1989). Second, their Inuttitut language skills will be enhanced by school instruction in Inuttitut (Crawford, 1989). Third, the assumption is that any gains students make in Inuttitut will be transferred quickly to other languages such as English or French (Lambert, 1983; Willig, 1985).

However, the form of bilingual education chosen by the Kativik School Board, while supported by general models of bilingual education, must be scientifically evaluated for several important reasons. First, finding and training Inuit teachers is time consuming and expensive, as is the development of programs and preparation of materials in Inuttitut. Such a commitment can only be justified if young students do make appreciable gains in their fluency and literacy in Inuttitut. Second, the value of this policy must be addressed if instruction through Inuttitut results in a long-term deficit in the learning of French or English. Third, changes may also be needed if the bilinguality of the program retards students in their learning of the content of the school material.

A scientific evaluation of the program requires much more than soliciting the opinions of educators, teachers, community leaders, parents, and students. After all, educators and teachers who are responsible for the program are biased and will likely speak highly of the program. Parents and community leaders may have a negative opinion because they see that children are not performing as well as they should. Thus, any solicitation of opinion will be biased in one direction or the other.

Fortunately, circumstances arose in the community of Kuujjuaq which permitted a genuine scientific analysis of the bilingual program. In 1988, the principal decided that parents should have the option to have their children schooled in Inuttitut, French, or English in Kindergarten, Grade 1, and Grade 2. Thus, a naturally occurring situation arose that allowed for an evaluation of the consequences of children being schooled in Inuttitut. By comparing the performance of children in the new Inuttitut program with children of the same age, the same community, and who were following the same curriculum, only in a different language (French or English), a direct test of the program could be made.

The research design called for testing all children in the Inuttitut, the English, and the French programs, with every child being tested in all 3 languages. They would be tested at the beginning and the end of the school year with a standard battery of tests.

### **Research Methodology**

Each child was tested in all three languages at the beginning, and at the end, of the school year for Kindergarten, Grade 1 and Grade 2. Thus, there were six testing sessions in all and it was possible to monitor the progress of the children through their first three years of school. Children were taken from their classes during regular instructions and tested individually in a quiet location. The order of the language of the tests was determined randomly and children did not receive more than one language battery of tests per day. The tests were administered by one of six trained testers: two native speakers of each of the three languages. The testers were experienced educators with long-term involvement in Nunavik schools. Testers were extensively trained and each observed the other same-language testers on a number of occasions to make sure that they all administered the tests in an identical manner. Although several of the testers were fluent in more than one language, each administered the tests only in their first language.

Each battery of tests was comprised of some 16 tests designed to assess general language competencies and language skills. The tests covered a range of skills and difficulty levels and took an average of 45 minutes per child to administer. The tests were designed by a committee comprised of researchers, teachers and education specialists, and were designed to be a fair test of children who are following the Kativik curriculum. This curriculum, while designed for Inuit students, does parallel the broader Quebec curriculum and is equally demanding. Once tests had been designed it was necessary to prepare careful translations in all three languages to ensure that each battery was identical.

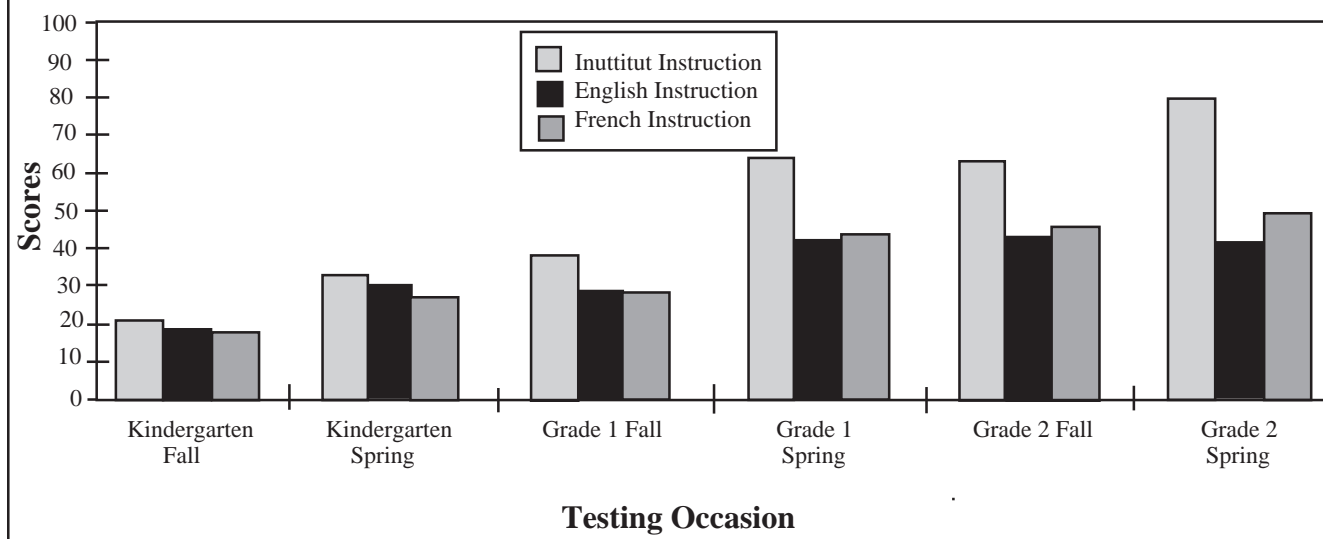
No single test is a fair measure of a child's language ability. That is why the battery included 16 tests. The child's total score across all 16 tests provides a good indication of the child's *General Language Proficiency*. This overall score can then be divided into two important components (Cummins, 1981; Snow, Cancino, Temply & Schley, 1991). First, some of the tests were combined to form a measure of *Conversational Language Proficiency*. This represents the child's ability to engage in simple conversations with friends and family about everyday events. Second, the more demanding tests were combined to form a measure of *Academic Language Proficiency*. These more demanding tests measure the child's ability to use a given language in order to engage in the kind of complex reasoning and problem-solving that is required to be successful at school.

## Results

The results of several years of testing point to significant academic and linguistic advantages for students receiving instruction in Inuttitut. Indeed the results are so clear, and the experience of parents' of children in the program has been so positive, that there has been a dramatic change in the choice of the parent's of children entering kindergarten. Initially, most parents opted for the programs using French and English as the language of instruction, with only a minority of parents enrolling their children in the Inuttitut program. In the last few years, parents have overwhelmingly opted for the Inuttitut option, to the point that there are insufficient students for the French and English streams.

The results for the *General Language Proficiency* scores are based on the student's total performance on all 16 separate tests. As shown in Figure 4, Inuit students in the Inuttitut program show the expected improvement in their scores in Inuttitut over the six testings. They make rapid gains during the school year, then remain at that level through the summer vacation. This profile for Inuit students in the Inuttitut program is precisely the same pattern and level of achievement shown by mainstream students in their first language. The Inuit students in the Inuttitut program also show steady improvement in English, although obviously not achieving the same high levels in English that they show in Inuttitut. Finally, their development in French is minimal. Clearly, the students are benefiting from their instruction in Inuttitut in terms of Inuttitut fluency. Their ability in their heritage language parallel that of mainstream students. The gains made in English are, no doubt, due to the widespread use of English in the community and its predominance on television.

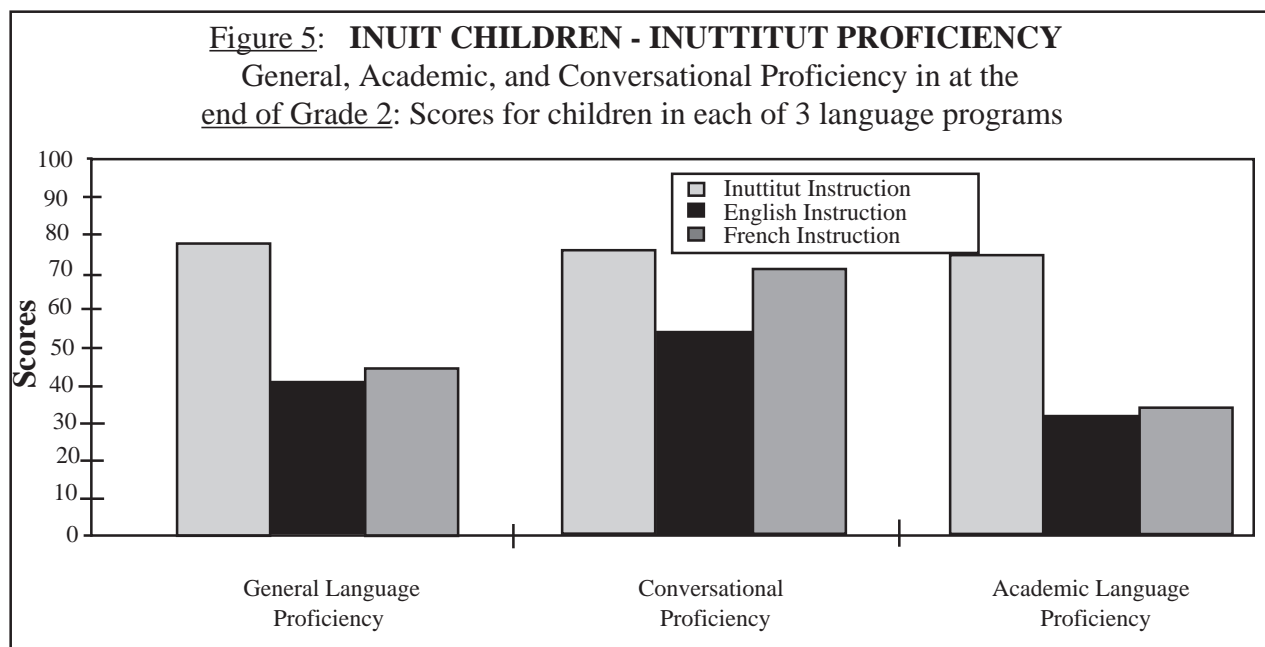
**Figure 4: INUIT CHILDREN - INUTTITUT PROFICIENCY**  
Scores on six test occasions by children in three language programs



Inuit students in the English program show strong improvement in English over the six testings. Because English is not their home language, by the end of Grade 2, these students have not achieved the same level in English as the students in the Inuttitut program have achieved in Inuttitut. Nevertheless, the students in the English program do make good progress in English. However, as one can see in Figure 4, while their Inuttitut skills do develop to some degree over the three years, children in the English program do not reach the high level shown by those in the Inuttitut program.

Finally, Inuit children in the French program make good progress in French, although they cannot benefit from the same community support for this language as those in the Inuttitut and English programs. Figure 4 clearly shows that, like children in the English program, the Inuttitut skills of children in the French develop somewhat over the three years, but they fall well short of the children who are in the Inuttitut program.

The results for the *Conversational Language Proficiency* and *Academic Language Proficiency* are particularly revealing. The second set of bars in Figure 5 show that at the end of Grade 2 (the final testing), the total scores on the easier tests that measure *conversational proficiency* are relatively high for children in all three language programs. Thus, at the end of Grade 2, students in the English and the French programs appear to have conversational skills in Inuttitut which are only slightly lower than those who are in the Inuttitut program. However, the last set of bars in Figure 5 show that for the more difficult *Academic proficiency* tests the students in the Inuttitut program score much higher than those in the English or French programs. What this indicates is that Inuit children in the Inuttitut program are developing a level of language skill that will allow them to use the Inuttitut language to solve complex mental problems. However, Inuit children in the English and French programs, while retaining their ability to carry on simple conversations, are falling behind in their ability to function at the highest levels in Inuttitut.



Clearly, there are considerable benefits associated with following an Inuttitut program of instruction. However, there are important questions that remain, and these questions must also be researched thoroughly. For example, what effect does following an English or French program after Grade 2 have on those students whose Inuttitut was so strong at the end of Grade 2? Will students who followed the English and French programs all the way through for Kindergarten to secondary school continue to lose their Inuttitut? Would there be even more benefits if Inuttitut was continued on into Grade 3 and beyond? When will students who have been in the Inuttitut program for Kindergarten to Grade 2 acquire skills in French or English that are equal to (or higher than) the skills shown by children who have been in the French or English programs from the beginning of Kindergarten? These are precisely the questions that are being addressed in current testing sessions with students in Kuujjuaq and Kangiqsujaq. The children are currently being tested through to Grade 7 with the hopes that these questions can be answered.

The rationale for implementing a bilingual program whereby students would spend their early years in school learning in Inuttitut is that the students will benefit academically from learning in their first language, that their Inuttitut skills will be enhanced by school instruction in Inuttitut, and that the gains made in Inuttitut will transfer quickly to English or French. All of these assumptions seem to be supported not only by international research but by the results from students in Nunavik.

## **BILINGUAL EDUCATION AND SELF-ESTEEM**

There is another important rationale for having students learn through their home language in their first years at school. Entering school for the first time can be rather traumatic for the young child and their difficulties in coping can be heightened when they not only must adjust to a new environment, but must also confront a new language from a teacher of a different culture (see Cummins, 1989). Presumably when the teacher speaks only in a language the child does not understand and behaves in ways that are very different from the way the child's parents and family behave, the child will feel increasingly uncomfortable and unworthy at school (Williamson, 1987; Wright & Taylor, 1995). Before long, the child may develop low self-esteem -- a mental state that is not conducive to effective learning (Covington, 1989).

The Kuujjuaq research project allowed for a scientific test of the effects of language of instruction on self-esteem. Some Inuit students followed a program where their home language, Inuttitut, was the language of instruction and their teachers were from their own cultural group. Inuit students in the French and English programs were taught in a second language and usually had a teacher from a different cultural group. By comparing the self-esteem of children in the Inuttitut program to those in a second-language program (English or French), it was possible to determine which program had the most positive impact on the students' self-esteem.

### **Research Methodology**

Self-esteem is very difficult to measure because it is a psychological state that most are unaware of in themselves, especially young children. Thus, the researcher cannot simply ask young children about their self-esteem. Instead, a more indirect methodology must be developed.

The test developed for the students in Kuujjuaq involved the use of Polaroid photographs. At the beginning of the test, the tester took two photographs of the child. The child was given one of the photographs as a gift to take home. The second photograph was added to a set of eight photographs of other children who were the same age as the child being tested. Each set of photographs contained four Inuit children (two boys and two girls) and four White children (two boys and two girls). None of the children in the photographs were known to the child being tested.

The child was presented with the nine photographs and asked to sort them on a variety of dimensions. For example, the child was asked to pick all the "girls," or pick all the "Inuit." In addition, the child was asked to pick all the children who are "smart", who are "nice", who are "happy", who "have lots of friends", who "like to go to school", who are "good at lots of things," and who "the other children don't like". Self-esteem is measured by the number of times the child picks his or her own photograph as one of the children who is smart, nice, happy, and so on.

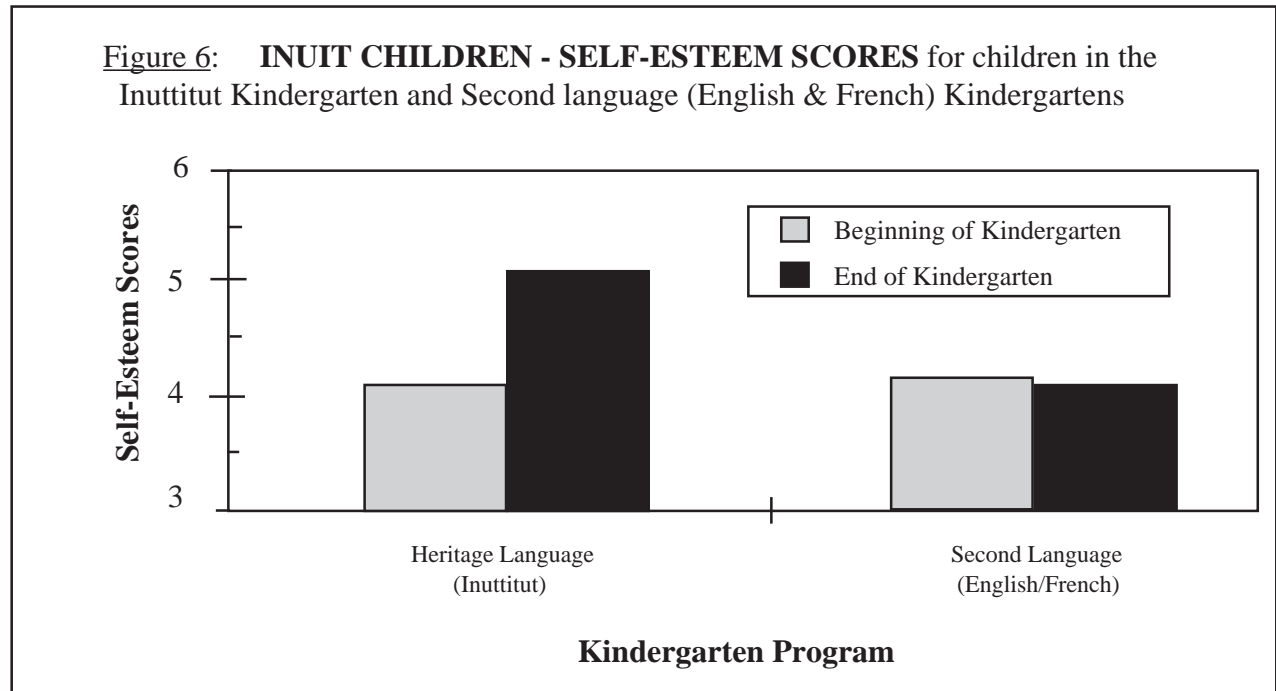
Also, group-level effects can be tested, by considering the number of photographs of other Inuit children and White children the child picks in response to these questions. If the child consistently sees the White children as more positive than the Inuit children, this would indicate a low level of esteem for his or her own group -- lower *collective self-esteem* (Crocker & Luhtanen, 1990; Cross, 1987).

This self-esteem test was given to children in the English, French and Inuttitut programs at the beginning and the end of their kindergarten year.

## Results

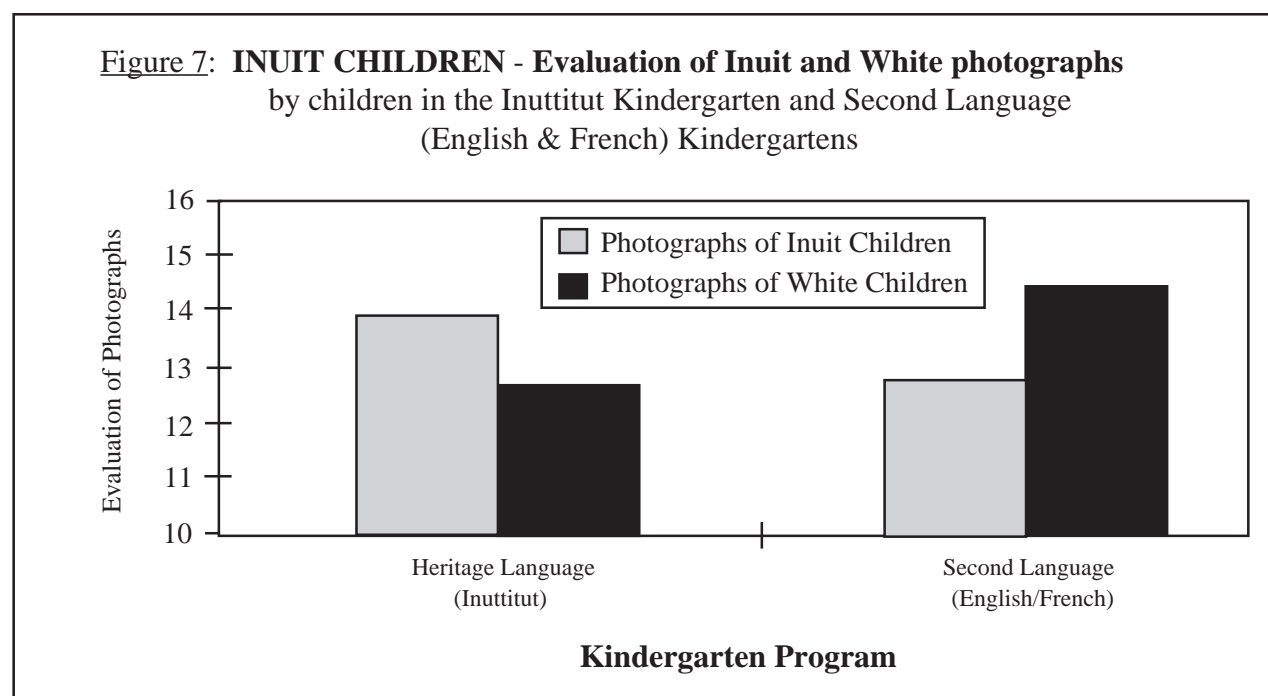
### Personal Self-Esteem

The results confirm that self-esteem is affected positively by having children learn in their own language. Generally, Inuit children in all three programs began kindergarten with positive self-esteem (most children see themselves as smart, nice, happy, etc.). Figure 6 shows that Inuit children in the second language programs maintained this positive view of themselves during the school year. However, Figure 6 also shows that students in the Inuttitut program began kindergarten with a positive self-esteem, and their self-esteem became even more positive over the school year. Thus students in the Inuttitut program showed an increase in self-esteem.



### Group-Level (Collective) Self-Esteem

Not only was the children's esteem affected positively by instruction in Inuttitut by an Inuit teacher, there were positive group-based effects as well. Figure 7 shows that Inuit children in the Inuttitut program tended to have a slight preference for other Inuit children over White children. This is a normal and healthy form of mild favouritism toward their own group. Most psychologists would agree that this demonstrates a positive collective view of Inuit children as a group. However, Figure 7 also shows that Inuit students in the French and English programs showed the reverse pattern; they actually preferred White children over Inuit children. Already, children in these second-language programs (English and French) are showing some of the negative effects on their group level esteem. They are beginning to down-grade their own group in a pattern that represents a form of negative collective self-esteem.



In summary, these results indicate that children not only learn better in their own language, but they develop a more positive view of themselves as a person and a healthier view of Inuit children as a group. Ongoing research is attempting to determine whether or not this trend continues as the students advance in their studies, and what happens to the children in the Inuttitut program when, in Grade 3, they suddenly switch to an English or French program.

## **BILINGUAL EDUCATION IN NUNAVIK: A CRITICAL ANALYSIS**

The portrait that arises from the findings of all these different research initiatives is one of affirmation and optimism, but a sense that there is more to be accomplished. First, the research reveals that the Kativik School Board is confronted with a situation where the Inuttitut language is fighting for its very survival and where the Board is asked to share the responsibility for ensuring a healthy future for Inuttitut.

Second, the children of Nunavik have as strong an academic potential as any other group in Canada or the United States. Thus, the current underachievement of the students is a problem that can be addressed if there is the political will and the appropriate expertise is brought to bear on the issue.

Third, the policy of using trained Inuit teachers and teaching in Inuttitut for the early grades seems well founded. Students in such a program gain linguistic, academic and self-esteem benefits over those schooled in a second language (English or French).

Finally, there are social benefits as well. By using Inuttitut as the language of instruction, the value and importance of the Inuttitut language is reinforced both in the minds of the children and the Inuit professional who administer and teach the Inuttitut programs.

This affirmation of current policy and optimism for the future must be accompanied, however, with some caution. While the research confirms the advantages of an Inuttitut program it also raises many questions which must be researched with equal care. The research raises the question of the long-term benefits of the Inuttitut program. The program lasts only until Grade 2 and it remains to be seen whether the academic and social benefits evidenced by the students at the end of Grade 2 will carry throughout their school years. This, in turn, raises a larger policy question. If students benefit from instruction in Inuttitut, why stop at the end of Grade 2? The implications of the research are that it might be advantageous to expand the Inuttitut program into Grades 3 and beyond.

Thus, the research points to a policy at the crossroads. On the one hand, the insight to introduce Inuttitut as the language of instruction for the early school years seems well founded. The board can only be gratified that a policy requiring such an investment of resources to train professional Inuit teachers, and to develop programs and materials in Inuttitut, has paid important dividends. The challenge for the future is to view the research as suggesting that a similar commitment and investment is needed to expand the Inuttitut program beyond the early years of schooling.

## REFERENCES

- AIKIO (M.), «The Finnish perspective: Language and Ethnicity» in COLLIS (D.R.F.), *Arctic languages: An awakening*. Paris: UNESCO, 1990.
- AUGUST (D.) & GARCIA (E.E.), *Language minority education in the United States: Research, policy and practice*. Springfield, IL: Charles C. Thomas, 1988.
- BERGSLAND (K.), «The Aleut language in Alaska» in COLLIS (D.R.F.), *Arctic languages: An awakening*. Paris: UNESCO, 1990.
- BRISLIN (R.W.), «Back-translation for cross-cultural research», *Journal of Cross-Cultural Psychology*, 1, 1970, p. 185-216.
- CARPENTER (P.A.), JUST (M.) & SNELL (P.), «What one intelligence test measures: A theoretical account of the processing in the Raven Progressive Matrices Test», *Psychological Review*, 97 (7), 1990, p. 404-431.
- COVINGTON (M.V.), «Self-esteem and failure at school: Analysis and policy implications» in MECCA (A.M.), SMELSER (N.J.) and VASCONCELLOS (J.), *The social importance of self-esteem*. Berkeley, CA: University of California Press, 1989, p. 72-124.
- CRAGO (M.B.), «Communicative interaction and second language acquisition: An Inuit example», *TESOL Quarterly*, 26, 1992, p. 487-505.
- CRAGO (M.B.), ANNAHATAK (B.) & NINGIURUVIK (L.), «Changing patterns of language socialization in Inuit homes», *Anthropology & Education Quarterly*, 24, 1993, p. 205-223.
- CRAWFORD (J.), *Bilingual education: History, policies, theory and practice*. Trenton, NJ: Crane Publishing, 1989.
- CROCKER (J.) & LUHTANEN (R.), «Collective self-esteem and intergroup bias», *Journal of Personality and Social Psychology*, 58, 1990, p. 60-67.
- CROSS (W.E.), «The two-factor theory of Black identity: Implications for the study of identity development in minority children» in PHINNEY (J.S.) & ROTHERAM (M.J.), *Children's ethnic socialization: Pluralism and development*. Newbury Park, CA: Sage, 1987.
- CUMMINS (J.), «The role of primary language development in promoting educational success for language minority students» in California State Department of Education, *Schooling and language minority students: A theoretical framework*. Los Angeles, CA: Evaluation Dissemination and Assessment Center, California State University, 1981.
- CUMMINS (J.), *Empowering minority students*. Sacramento, CA: California Association for Bilingualism Education, 1989.
- CUMMINS (J.) & SWAIN (M.), *Bilingualism in education: Aspects of theory, research and practice*. New York: Longman, 1986.
- DORAIS (L.J.), «Bilingualism and diglossia in the Canadian Eastern Arctic», *Arctic*, 42 (3), 1989, p. 199-207.
- DUFFY (R.Q.), *The road to Nunavut*. Montréal, QC: McGill-Queen's University Press, 1988.
- FOSTER (M.), «Canada's first languages», *Language and Society*, 9, 1984, p. 7-16.
- FRIDERES (J.S.), *Native peoples in Canada: Contemporary conflicts*. Scarborough, ON: Prentice-Hall, 1988.
- GENESEE (F.), *Learning through two languages: Studies of immersion and bilingual education*. Cambridge, MA: Newbury House, 1987.
- HOLM (A.) & HOLM (W.), «Rock Point, A Navajo way to go to school: A valediction», *Annals AAPSS*, 508, 1990, p. 170-184.
- IONESCU (S.), JOURDAN-IONESCU (C.), ALAIN (M.), ROUSSEAU (J.) & INOSTROZA (J.), «PM47: Analyse des résultats de 768 enfants québécois de 6 à 11 ans», *Revue francophone de la déficience intellectuelle*, 3, 1992, p. 25-38.
- KAPLAN (L.D.), «The language of the Alaskan Inuit» in COLLIS (D.R.F.), *Arctic languages: An awakening*. Paris: UNESCO, 1990.
- KATIVIK SCHOOL BOARD, *Annual Report (1978-1985)*. Dorval, QC: 1985

- LAMBERT (W.E.), «Effects of bilingualism on the individual: Cognitive and socio-cultural consequences» in HORNBY (P.A.), *Bilingualism: Psychological, social and educational implications*. New York: Academic Press, 1977, p. 15-28.
- LAMBERT (W.E.), «Deciding on languages of instruction: Psychological and social considerations» in HUSEN (T.) & OPPER (S.), *Multicultural and multilingual education in immigrant countries*. Oxford: Pergamon Press, 1983, p. 93-104.
- LAMBERT (W.E.) & TAYLOR (D.M.), «Language in the education of ethnic minority immigrants» in SAMUDA (R.J.) & WOODS (S.L.), *Perspectives in immigration and minority education*. Washington, DC: University Press of America, 1983.
- PRIEST (G.E.), «Aboriginal languages in Canada», *Language and Society*, 15 1985, p. 13-19.
- RAMPAUL (W.E.), SINGH (M.), & DIDYK (J.), «The relationship between academic achievement, self-concept, creativity, and teacher expectations among Native children in a northern Manitoba school», *Alberta Journal of Educational Research*, 30 (3), 1984, p. 213-225.
- RAVEN (J.C.), *American and international norms: Raven manual research supplement 3*. London: Oxford Psychologists Press, 1990.
- RAVEN (J.C.), COURT (J.H.) & RAVEN (J.), *Raven manual: Section 2 - Coloured Progressive Matrices*. London: Oxford Psychologists Press, 1990.
- RAVEN (J.), RAVEN (J.C.), & COURT (J.H.), *Raven manual: Section 1 - General overview*. London: Oxford Psychologists Press, 1993.
- ROBITAILLE (N.) & CHOINIÈRE (R.), *An overview of demographic and socio-economic conditions of the Inuit in Canada*. Ottawa, ON: Research Branch, Corporate Policy, Indian and Northern Affairs Canada, 1985.
- RUGGIERO (K.M.), AITCHISON (M.C.), TAYLOR (D.M.), & WRIGHT (S.C.), *Echoes from the Arctic: A survey of language attitudes and social issues in Akulivik*. Report prepared for the Kativik School Board, 1995.
- SKUTNABB-KANGAS (T.), «Multilingualism and the education of minority children» in SKUTNABB-KANGAS (T.) & CUMMINS (J.), *Minority education: From shame to struggle*. Philadelphia, PA: Multilingual Matters, Ltd., 1988, p. 9-44.
- SNOW (C.E.), CANCINO (H.), DE TEMPLE (J.) & SCHLEY (S.), «Giving formal definitions: A linguistic or metalinguistic skill» in BIALYSTOK (E.), *Language processing in bilingual children*. New York: Cambridge University Press, 1991, p. 90-112.
- TAYLOR (D.M.), *Carving a new Inuit identity: The role of language in the education of Inuit children in Arctic Quebec*. Paper presented at the Circumpolar Education Conference. Umea, Sweden: June 1990.
- TAYLOR (D.M.), MEYNARD (R.) & RHEAULT (E.), «Threat to ethnic identity and second-language learning» in GILES (H.), *Language, ethnicity, and intergroup relations*. London: Academic Press, 1977.
- TAYLOR (D.M.) & WRIGHT (S.C.), «Language attitudes in a multilingual northern community», *Canadian Journal of Native Studies*, 9, 1989, p. 85-119.
- TAYLOR (D.M.), WRIGHT (S.C.) & AITCHISON (M.C.), *The voices of Inukjuak: A community survey of language attitudes*. Report prepared for the Kativik School Board, 1991.
- TAYLOR (D.M.), WRIGHT (S.C.), RUGGIERO (K.M.) & AITCHISON (M.C.), *Language perceptions among the Inuit of Arctic Quebec: The future role of heritage language*. *Journal of Language and Social Psychology*, 12, 1993, p. 195-206.
- United States Department of Education, Office of Indian Education, *The status of educational attainment and performance of adult American Indians and Alaska Natives*. Washington, DC: US Government Printing Office, 1987.
- WILLIAMSON (K.J.), «Consequences of schooling: Cultural discontinuity amongst the Inuit», *Canadian Journal of Native Education*, 14, 1987, p. 60-69.
- WILLIG (A.C.), «A meta-analysis of selected studies on the effectiveness of bilingual education», *Review of Educational Research*, 55, 1985, p. 269-317.
- WRIGHT (S.C.) & TAYLOR (D.M.), «Identity and the language of the classroom: Investigating the impact of heritage versus second language instruction on personal and collective self-esteem», *Journal of Educational Psychology*, 87, 1995, p. 241-252.

- WRIGHT (S.C.), TAYLOR (D.M.) & RUGGIERO (K.M.), «Examining the potential for academic achievement: An analysis of Inuit children's performance on the Raven Coloured Progressive Matrices Test», *Journal of Cross-Cultural Psychology*, 27, 1996, p. 733-753.
- WRIGHT (S.C.), TAYLOR (D.M.), RUGGIERO (K.M.) & Macarthur (J.), *Heritage Language Maintenance and Second Language Learning: Early Inuttitut Instruction and Additive or Subtractive Bilingualism in Nunavik*. Report prepared for the Kativik School Board, 1996.