

Western University
Scholarship@Western

Aboriginal Policy Research Consortium International (APRCi)

2009

Enhancing Educational Attainment for First Nations Children

Jerry P. White

Julie Peters

Dan Beavon

Follow this and additional works at: <https://ir.lib.uwo.ca/aprci>



Part of the [Education Policy Commons](#)

Citation of this paper:

White, Jerry P.; Peters, Julie; and Beavon, Dan, "Enhancing Educational Attainment for First Nations Children" (2009). *Aboriginal Policy Research Consortium International (APRCi)*. 18.
<https://ir.lib.uwo.ca/aprci/18>

7

Enhancing Educational Attainment for First Nations Children

Jerry P. White, Julie Peters, and Dan Beavon

Introduction

Education has been targeted as a key issue for both federal and provincial policy for the coming years. After the November 2005 meeting of First Ministers and Aboriginal leaders, a statement was released in which participants pledged to eliminate the gap in K–12 educational attainment by 2016.¹ This policy decision is based on research foundations that document First Nations students as having patterns of lower educational achievement than the student population at large (King 1993, White and Maxim 2002). This lower attainment has been shown to be correlated with lower income (Maxim, White, and Beavon 2001), reduced well-being (Beavon and Cook 2003) and lower rates of labour force participation (White and Maxim 2002). Targeting education is also predicated on research indicating that there are real social and economic returns to improvements in human capital (White and Maxim 2003).

This report is aimed at developing a proposal for using incentives to improve the use of diagnostics in basic skills learning by First Nations children. Our thinking is that if the acquisition of the basic academic skills is problematic, then the problems of attainment, particularly at the high school level, may be explicable. Through encouraging the use of standardized testing of First Nations students, the problems and successes in skills transfer will be exposed. This may lead to improvements in both teaching methods and curriculum content over time.

This report has six aims:

1. To clearly present the problem First Nation students face in terms of educational attainment based on recent research presented at the Aboriginal Policy Research Conference.
2. To develop a review of relevant North American literature on dialogues and studies of performance-based assessment and standards-based reform of Aboriginal education.
3. To present a proposal that moves Canada closer to a full performance-based assessment of nationally recognized and culturally sensitive content standards as a basis for funding the growth of educational achievement. This will include a rationale for transferring funds to First Nations' communities, based on the number of students who train for and take provincial standardized tests. A

mechanism will be proposed for determining how the funds can be delivered and their criteria for transfer.

- 4 To outline the procedures and standard assessment tools used provincially in Canada.
- 5 To project a potential cost for a financial incentive program to encourage First Nations schools to enter into the standardized testing processes of the provinces. Scenarios will be developed that estimate the probable costs of the transfer under selected assumptions (annual vs. multi-year) and finally we will assess the possible returns from such a program (principally income and labour force participation).
- 6 To outline the future research and development that must be done to enhance the success of the proposed program.

The Problem of Attainment

Both older reviews and recent studies indicate that there is a gap in educational attainment between First Nations students and other Canadian students. Older reviews point to certain patterns of underachievement. First, high school completion rates are considerably lower among the First Nations population than among the rest of the population. In a study of First Nations students in Ontario schools, MacKay and Myles (1989) report that while the enrolment of students increased in the 1980s, the overall graduation rate from high school for Registered Indians remained considerably lower than the non-Aboriginal population. In the grade 9 cohorts that they studied, the graduation rate for Registered Indian students was between 33% and 55%, compared to reported completion rates for non-Aboriginal students of more than 70% in all districts (MacKay and Myles, 1989). Armstrong, Kennedy, and Oberle (1990) found, using 1986 national data, that only 25% of Registered Indians completed high school as compared with one-half of the non-Indian population. In 1986, Aboriginal people were also 2.2 times more likely not to complete high school than non-Aboriginal people. By 1996, that relationship was measured at 2.6 times more likely to have not completed high school (Tait, 1999).

A second significant pattern relates to post-secondary attainment. Siggner (1986) found that in 1971, less than 3% of the First Nations out-of-school population had attained any post-secondary education. Encouragingly, by 1981 that proportion had risen to 19%, but this was still less than half the national average. Only 23% of Aboriginal high school completers were going on to university by the early 1990s (King 1993).

Early studies also pointed to differences in levels of attainment on- and off-reserve. Generally speaking, First Nations people residing off-reserve have been shown to have greater educational attainment than people living on-reserve (McDonald 1991, Canada 1991). Census data from 1986 and 1991 showed that Registered Indians living on-reserve were almost twice as likely to have less than

a grade 9 education than those living off-reserve. Status Indians living on-reserve were also less likely to complete high school (Canada 1995).

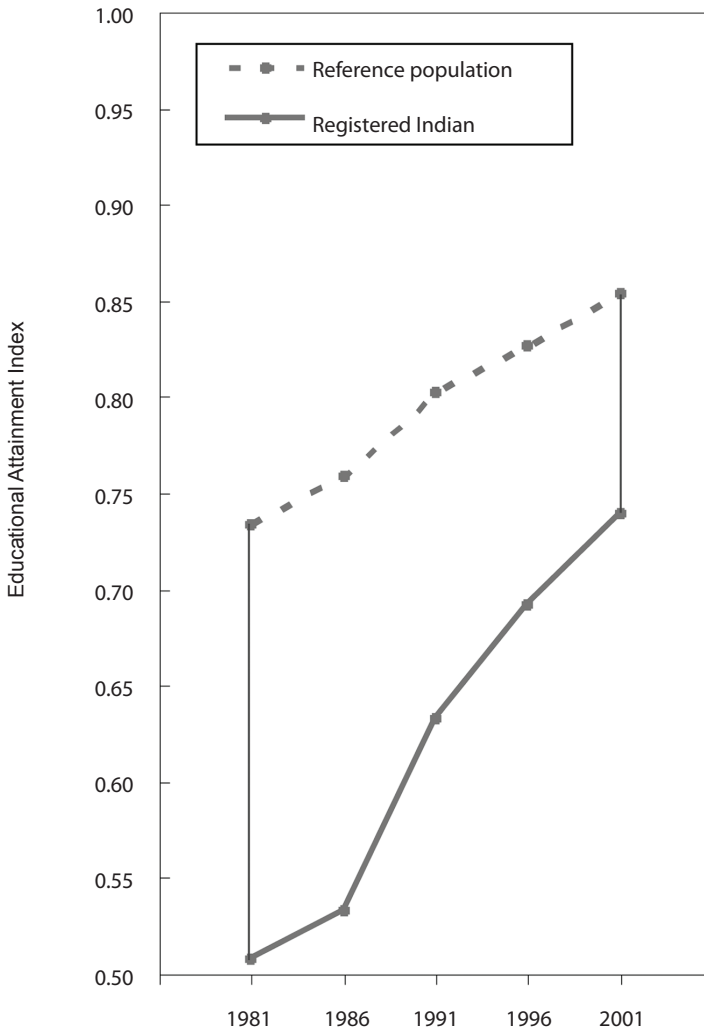
More recent studies have shown signs of incremental improvements. Between 1996 and 2001 the percentage of young Aboriginal adults (15+) with less than a high school diploma dropped from 54% to 48%. Those whose highest level of education was a high school diploma rose from 9% to 10% while those with any form of post-secondary credentials rose from 26% to 29%. However, the number of Aboriginal persons holding a university degree actually dropped from 5% in 1996 to 4% in 2001, although it should be noted that the proportion of non-Aboriginal peoples with university credentials also dropped by one percentage point during this time period (Mendelson 2006).

For most levels of educational attainment, the gap between Aboriginal and non-Aboriginal attainment narrowed between 1996 and 2001. However, if we look only at those aged 20–24 we find that differences stayed the same or actually widened in regards to having some post-secondary education, non-University post-secondary education and University post-secondary education. Furthermore, high school non-completion rates remain alarmingly high in this age group, with 43% of the Aboriginal population age 20–24 attaining less than a high school diploma in comparison to 16% of the non-Aboriginal population (Mendelson 1999).

In a 2002 study, White and Maxim looked at three non-traditional measures of educational attainment among Aboriginal students living on-reserve: graduation rates, withdrawal rates, and age appropriateness for the grade the students were in. Using 1995–1996 data, the graduate rate among the sample averaged 19.8 % and the withdrawal rate was 17.8%.²

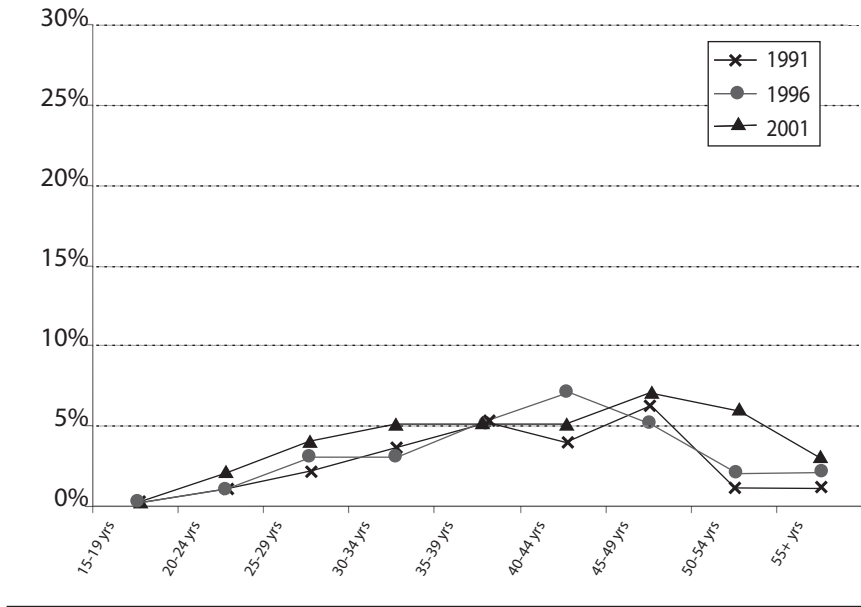
For the third measure of educational attainment, the age-appropriate rate, it was found that Aboriginal students living on-reserve lagged behind the general population with approximately 46% of the grade 12 and 13 students being age appropriate for their grade. This was approximately 78% behind the non-Aboriginal population's age-appropriate numbers. These findings are supported by British Columbia studies, which indicated that 61% of Aboriginal students compared to 23% of non-Aboriginal students did not complete high school in six years and that Aboriginal students are behind age-grade level norms in every grade in every district examined (British Columbia 2000a, 2000b). White and Maxim also found that the age-appropriate rate was much higher among younger students than older students, with the rate among students in grades 9 or lower being 90.8% but dropping significantly to 55.4% in the high school grades.

White and Maxim also examined differences between band students who attend provincially operated schools and those who attend band-operated schools for the 1995–1996 and 2000–2001 school years. They found that band students who chose to go to provincially operated schools had a higher age-appropriate rate than those in band-operated schools, but that the students tended to withdraw in larger numbers from the provincially operated schools. Before grade 9, the age-appro-

Figure 7.1: The HDI Educational Index

priate rate for students in provincial schools was 92.8%, while in band schools it was 86%. After grade 9, the age-appropriate rate drops to 62% for provincial schools and 43.8% for band schools. The withdrawal rate for provincial schools, however, is 18.2% compared to 11.8% for band schools. It was noted that provincial schools do not have a statistically significant different effect on graduate rates or withdrawal rates than band schools

In an update of this study, White, Maxim and Spence (2004) found significant improvements in the age-appropriate rate in both provincial and band operated schools over the five year period from 1995–1996 to 2000–2001. For provincial schools, the age-appropriate rate among school leavers increased from 49.2% to

Figure 7.2: Proportion of Registered Indians with a University Degree, 1991, 1996, & 2001

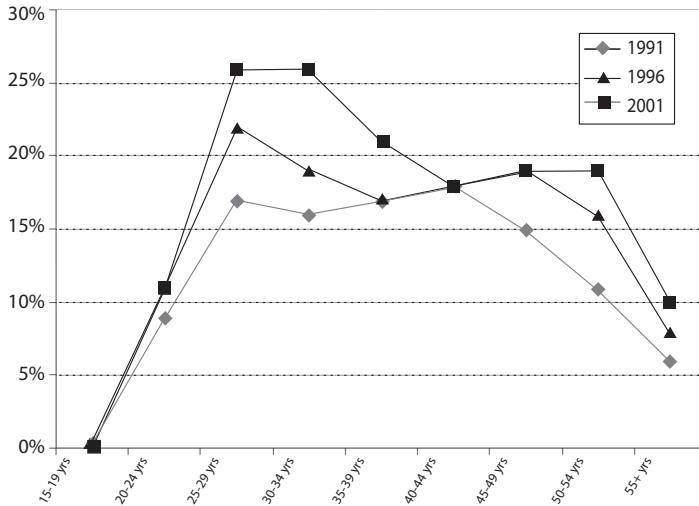
73.2% while the rate increased from 45.4% to 61.3% in band schools. Changes in the withdrawal rate by type of school were not calculated, but analysis showed that the overall withdrawal rate fluctuated yearly, decreasing from 41.1 in 1995–1996 to 30.3 in 2000–2001.

Identifying Accurate Trends Overtime

The studies discussed above indicate that there is a pattern of lower educational attainment among Aboriginal peoples. However, we are not able to clearly identify educational trends over time, as the studies used different population samples, different data sources, and different levels of attainment. Therefore, Census data on education for the Registered Indian population and the other Canadian population is presented here to enable analysis of changes in educational attainment over time.

Figure 7.1 is an examination of the educational component of the HDI measure developed by White, Beavon and Cooke (See Beavon and Cooke 2003, White and Beavon forthcoming). The HDI educational index is created using two measures. The first measure is the proportion of the population that has completed grade 9, and the second measure is the proportion of the population that has completed grade 12. The non-Aboriginal population is used as the reference population.

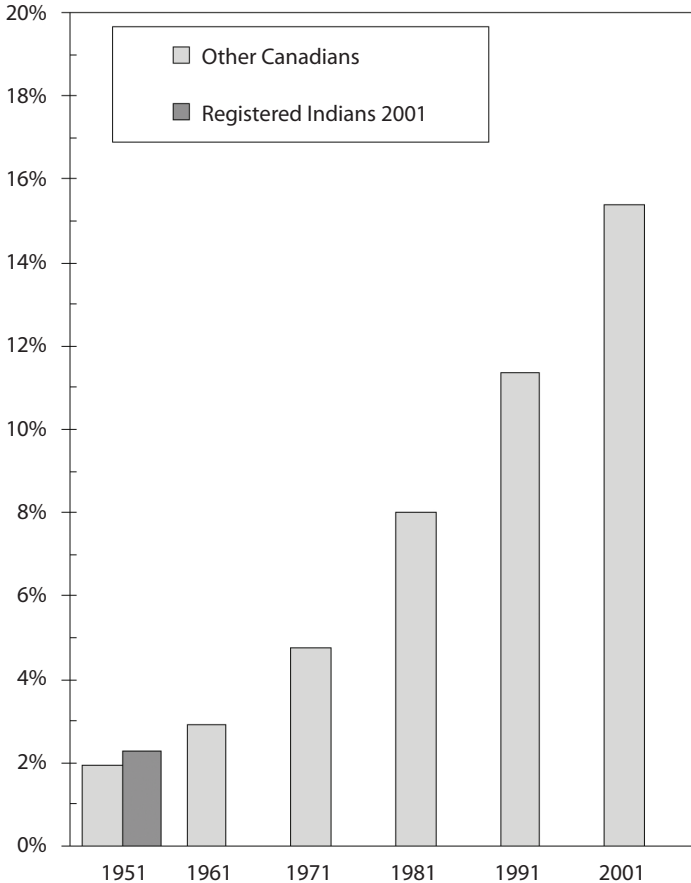
Looking at **Figure 7.1**, we first see that the Registered Indian population has shown tremendous improvement from 1981 to 2001. However, while significant progress has been made, a large gap remains between the Registered Indian

Figure 7.3: Proportion of Other Canadian Population with a University Degree, 1991, 1996 & 2001

population and the non-Aboriginal population. We also see that as of 2001, the Registered Indian population is at the same level on the education index as the non-Aboriginal population was in 1981. Thus, the gap in grade 9 and grade 12 completions between the Registered Indian and non-Aboriginal population is closing, but very slowly.

We can also examine trend data for post-secondary attainment. **Figures 7.2** and **7.3** show the proportion of Registered Indians and other Canadian population, respectively, with a university degree for the years 1991, 1996, and 2001. The data is further broken down by age category. Looking at **Figure 7.2** alone we see that since 1991, the Registered Indian population has shown only modest increases in university-level attainment. When we compare this to other Canadians, shown in **Figure 7.3**, it is clear that the other Canadian population has seen significant increases in university attainment during this same time period, especially in the 25–29 and 30–34 years old age groups. This suggests that the gap in university attainment between the Registered Indian population and other Canadians has actually widened from 1991 to 2001 (Clement, 2007).

Figure 7.4 also looks at post-secondary attainment in a different way, presenting data on the percentage of the other Canadian population 15 and over who achieved a university degree for the years 1951 to 2001, along with the 2001 percentage for the Registered Indian population. This graph more starkly highlights the disparity in university-level attainment, showing that, as of 2001, the percentage of the Registered Indian population with a university degree was roughly equal to the 1951 attainment levels of the other Canadian population.

Figure 7.4: Proportion of the Population with a University Degree

This trend data is important in that it demonstrates that while there has been success in reducing disparity at the lower levels of attainment, this has not been followed by a significant increase in university-level attainment among the Registered Indian population. Canada has a knowledge-based economy which increasingly demands ever higher levels of education for economic prosperity. Therefore, increasing high school graduation rates is positive but it also needs to be accompanied by improving university enrolment and completion rates, which does not appear to be happening.

The Importance of Increasing Educational Attainment

While the previous studies revealed attainment difficulties and gaps in achievement between Aboriginal students and non-Aboriginals, the returns to education

for Aboriginal students who do succeed are dramatic. Hull (2000, 2005) has shown that higher levels of educational attainment among the Aboriginal population are correlated with significant increases in labour force participation, employment, and income, and with lower unemployment levels. The largest gains are made at two key benchmarks: completion of high school and achieving a post-secondary degree or certification. This indicates that formal education is a major factor in the First Nations population achieving economic parity with the rest of the country.

Educational attainment has also been linked to improved health and well-being. Aboriginal individuals with less than a high school education are far more likely to report being unhealthy than are individuals with a high school or post-secondary education (Wilson and Rosenberg, 2002). An individual's educational attainment also has an impact on their child's well-being. According to the Aboriginal Peoples Survey, children of a parent with a university degree are far more likely to report having very good or excellent health than are children whose parent completed elementary school or less (Turcotte and Zhao 2004).

One of the brightest rays of hope lies in the finding that there are community correlates with educational achievement. The most promising is that as the average education increases in the parental population, there are incremental gains in students' levels of achievement. Spence, White and Maxim (forthcoming) have found that the level of education among the adults in a community is an important factor related to a higher age-appropriate rate and graduation rate and a lower withdrawal rate. Furthermore, Turcotte and Zhao (2004) have found that the higher a parent's education, the less likely it is that their child will ever repeat a grade. This indicates that as we make improvements in the achievement of this cohort and the next generation of students, these improvements will trigger even greater positive consequences in later generations.

Where Do We Go From Here?

While it is clear that there is a gap in educational attainment between Aboriginal youth and other Canadian youth, and that education can have an impact on employment, income, health, well-being, and community development, it is less clear exactly why such differences in attainment exist and what can be done to close the gap. The gap may be due to curriculum, instruction quality, social factors or a range of other issues. For the most part, there is also a lack of information regarding which specific areas Aboriginal students excel in, and in which they have greater difficulties.

Implicitly, this report argues that it is necessary to have some external device to assess the nature of these problems. More specifically, it suggests that provincial standardized tests could serve this purpose. But more important, this evaluation mechanism is proposed as an incentive system that transfers needed dollars while encouraging the development of better learning and improved achievement. We propose that a financial incentive be given to the bands, linked to educational

issues only, based on the bands' having their students engage in the provincially administered standardized tests. The students from the First Nations communities that choose to attend the public schools are already subject to the standardized assessment programs. They can act as a crude control for comparative purposes between band-school-educated students and those who leave.³

We are not alone in recognizing this need. The Northern Aboriginal Education Circle, a group composed of educators in provincial and First Nations schools in Northern Ontario, encourages First Nations schools in Ontario to take part in provincial testing so that educators can get a baseline of how students are performing, targets can be set for improvements, and schools who are doing well can share best practices. Increasing data gathering, analysis, and setting targets for improvement is one of four key goals of the group's work plan. The Assembly of First Nations (AFN) has also identified information gathering and analysis as a key requirement needed to improve First Nations education. Without this information, they argue that First Nations are at a disadvantage in terms of identifying successes and failure and improving educational practices (AFN 2005).

One of the strongest advocates of the use of assessment systems for improving Aboriginal education has been Chief Nathan Mathew of the North Thompson Indian Band in British Columbia. Mathew believes that the data provided by standardized testing can prove to be a valuable tool in communicating needs to government bodies, educational authorities, parents, and the public. He argues that it is only by knowing how students are faring in different areas that meaningful dialogue about improving education for Aboriginal students can take place (Bell, et al. 2004).

In a report detailing case studies of success in Aboriginal schooling, Bell, et al. (2004) identify a strong link between the use of assessment data and performance. They note that the provinces that have assessment programs and use the data for improvement planning have shown the largest gains in Aboriginal education (321). Thus, they recommend that all First Nations schools measure, track, and report on student performance in part by participating in provincial assessments (324).

Furthermore, while band operated schools do not currently have to participate in provincial standardized testing, some schools have already chosen to do so. Two examples are Chalo School on the Fort Nelson Reserve in BC and Peguis Central School on the Peguis Reserve in Manitoba. Educators in these schools are said to have positive attitudes towards provincial standardized testing and believe that it provides them with useful information about their students (Bell, et al. 2004).

The inadequacy of current funding for Aboriginal education is also well known. The AFN has stated that First Nations are currently facing an education funding crisis which is hindering meaningful progress from being made in improving education outcomes for Aboriginal students. Over the last eight years, there has been a 2% funding cap for First Nations education which has contributed to the

current underfunding. This funding cap can be contrasted with the provincial education systems, which have received on average a 3.4% increase per year during the same time period. The AFN (2006) estimates that over the next five years there will be a \$1.2 billion funding shortfall for elementary/secondary schools. The Auditor General has also called attention to the inadequacy of current funding arrangements (2000, 2004). In a 2004 report, the Auditor General points out that the funding formula currently used to allocate core funding to band-operated schools, which has not been updated since it was created in the 1980s, is outdated.

This proposal aims to infuse much needed finances into education while developing benchmarks for future measurement and the assessment of possible improvement. This scheme would lay the first structures for performance-based funding and empirical studies of core strengths and weaknesses. The proposal is consistent with approaches being used in other jurisdictions. As we point out in a later section of this report, however, there are some very serious and important issues to confront in the medium term. These include the involvement of the First Nations, including parents, in the development of better test instruments and in the development of a long-range strategic plan for enhancing the educational attainment of First Nations students. In the next section we review the research done on standardized testing and standardized curricula, as it applies to First Nations.

The Scientific Literature and Research around Assessment, Standards, and Incentives

This review is directed at studies and discussions that have centred on the assessment of Aboriginal children in North America, and the issues surrounding standards-based reform and assessment. By standards-based reform we refer to the attempt to improve the core of what is taught in schools through a standardized testing mechanism.

The US Experience

Over the past few decades, the United States has been moving increasingly towards the use of national testing as an accountability mechanism—an assessment of student, school, district, and state performance—and a way of improving and standardizing school curriculum. The impetus for a national program came from research findings indicating that American students were lagging behind their peers in other countries around the world (Jennings, 1998). This problem was even more pronounced among disadvantaged and minority students, including the American Indian and Alaska Native populations. Thus, in an effort to improve the educational performance of American students, the US government has been trying to establish certain basics that all in the US students need to know, along with the level at which students should be able to perform the basic skills.

Through *Goals 2000: The Educate America Act* (1993) and the *Improving America's Schools Act* (1994), states were required to bring in new content standards and assessment systems. In 2001, the standardized testing regime was strengthened with the *No Child Left Behind Act* (NCLB). This Act mandates that all states must administer standardized tests in reading and math to students in grades 3 through 8 and at least once during high school. Testing in science must be carried out at least once in grades 3 to 5, grades 6 to 9 and grades 10 to 12. Previously, states would often administer different tests to students who performed at a lower level. A key change under the NCLB is that all students within a state, including students in the 184 schools administered by Bureau of Indian Affairs (BIA), are required to write the same test. States must submit assessment plans and results to the secretary of education and annual report cards for individual districts and schools are released to the public.

The act also mandates that each state must define the Adequate Yearly Progress (AYP) that is necessary in order to reach the goal of every student scoring at the proficient level in reading/language arts and mathematics by the 2013–2014 school year. AYP must be defined and met for all students as a whole, as well as for four subgroups: economically disadvantaged students, students from major racial and ethnic groups in the state, students with disabilities, and students with limited English proficiency. States, districts, and schools are required by law to meet AYP targets. For schools who fail to meet AYP for more than two consecutive years there are strong punitive measures, such as replacing school staff, restructuring, or state-takeover. Meeting the requirements of NCLB is also tied to Title 1 funding, which is the largest single federal funding source for education. Non-compliance with NCLB results in the withholding of Title 1 funds.

Implementation of the NCLB in Bureau schools has been a challenging process, as the BIA struggles with many of the same issues facing Indian and Northern Affairs Canada (INAC) in Canada with regard to educational attainment (BIA 1988). American Indian and Alaska Native students score lower on National Assessment of Educational Progress reading and mathematics assessments, score lower on the SAT exam, have higher rates of absenteeism, are more likely to drop out of school, and are less likely to enrol in college or university than the non-Indigenous population (Freeman and Fox 2005). Acknowledging the special challenges that BIA schools face in meeting the requirements of the NCLB, an executive order was signed in 2004 to study and report on the achievement and progress of American Indian and Alaska Native students and to establish an Inter-agency Working Group to oversee the implementation of the legislation.

While initially the BIA was to develop its own assessment system and targets to meet the requirements of the NCLB, this was later revised such that Bureau schools must now adopt their state's standards. This was done because when the requirement for new assessment systems was first mandated under the *Goals 2000 Act*, the Bureau of Indian Affairs decided to formulate its own national curriculum, standards, and assessment that all tribes would follow, but most Bureau schools

chose to adopt the standards of the state in which they were located. Individual tribal school boards can develop alternative progress standards, but they must be approved by the secretary of education (Bureau of Indian Affairs, 2005). At the present time, most BIA schools use the content standards and assessment systems of the state in which they are located.

Fox (2001) has noted that the adoption of state content standards by BIA schools holds promise for three reasons. First, they encourage more common curricula among schools within states and clearer learning expectations across states. This is potentially helpful to Indian educators in meeting the needs of the students who transfer between schools. Because the BIA's schools have chosen to adopt the state standards in which they are located, the public and Indian schools have much more in common. Second, the content standards drive the curriculum; therefore educators, parents, and students can refer to them to provide increased focus on teaching and learning. Lastly, the new content standards encourage instruction improvement.

There is very little, if any, evidence that reliably assesses the outcomes of these changes in the US system. There are some very interesting observations, however, that have arisen in the process of implementation of these changes. A series of hearings and consultation sessions involving American Indian and Alaska Native educators, administrators, leaders, parents, and students brought forth many negative aspects of the NCLB legislation's affect on Indian education. In a preliminary report produced by the National Indian Education Association (NIEA), it is stated that while the majority of witnesses believed that greater accountability among schools and districts is a positive aspect of the NCLB, they did not believe that the legislation was having the desired effect and many felt that the legislation was actually leaving Native children behind (Beaulieu, Sparks and Alonzo 2005). A key problem appears to be that mandated assessment has not been accompanied with adequate funding. This has meant that districts and schools may have poor testing scores, but are not provided with the resources to improve performance.

This underfunding has also led schools to focus their existing resources on teaching to the test at the expense of liberal arts and Native language and cultural programming. In terms of the learning environment, the high stakes attached to assessment results and the pressure to achieve the mandated Annual Yearly Progress has created a climate in which students and teachers feel as though they are blamed for poor results, leading to higher dropout rates and higher teacher turnover. Concern was also voiced over the focus on annual school results, as opposed to individual student improvement. Finally, many argued that the NCLB is far too rigid and was constructed without consultation with Native peoples (Beaulieu, Sparks, and Alonzo 2005).

One positive result of NCLB that was discussed in the report was the increased data available on the performance of Native students (Beaulieu, Sparks, and Alonzo 2005). Under NCLB, the BIA must now publish a Bureau-wide annual report card as well as individual report cards for each BIA school. The report

cards provide detailed information on student performance such as test results for language arts, reading and mathematics, as well as average daily attendance rates, graduation rates, and dropout rates. The student data is broken down by male/female and by Special Education and Limited English Proficiency groups. Data on educators is also provided, such as the number of teachers, teacher turnover, average school principal tenure and the number of core area teachers who incorporate culture or language into classes (See Appendix 2).

The 2005–2006 Bureau-Wide Report Card shows that 47.5% of students in BIA schools are performing at the Proficient or Advanced levels in language arts, 36.7% are doing so in reading and 29.8% in mathematics. Scoring below proficient is considered failing. These figures represent decreases in achievement from the 2004–2005 school year in reading and mathematics, with language arts remaining roughly the same. The report card also shows that less than one third of BIA schools are meeting AYP (Bureau of Indian Affairs, 2006).

While the high stakes testing regime ushered in by the NCLB is widely criticized, the US experience can provide insight into the uses and dangers of a large-scale assessment system. Standardized testing is not a panacea and cannot be thought of as the definitive determinant of a student's academic performance, but rather as one measure which can provide useful information regarding students' progress at the individual, school, and regional levels. The US practice of publishing individual school test results, mandating specific increases in achievement, expecting large results in a short amount of time, and tying results to high stakes penalties are seen by many to be having negative consequences. It is also important to keep in mind recent research findings showing a link between neighbourhood social capital and performance on standardized testing (Berthelot, Ross, and Tremblay 2001). In light of this information, it may be important to consider school performance within the neighbourhood context and to determine student and school progress based on individual improvement rather than in comparison with other schools or on the basis of a regionally mandated target.

The whole debate over testing, assessment, and standards is fascinating and can provide interesting perspectives for understanding the implications and potential flashpoints in the process. We will touch on a very few key issues in the literature.

The Limitations and Uses of Standardized Tests

The term “standardized testing” often carries a negative connotation among educators and in academic circles. Many of the concerns raised by those who oppose standardized testing are valid and should be considered. However, rather than dismiss standardized testing outright, these criticisms point to important precautions that need to be taken when implementing an assessment system. The following are five of the main criticisms that have been put forth in opposition to standardized testing.

Teaching to the Test

A common criticism of standardized testing is that it leads educators to “teach to the test” (Mehrens and Kaminski 1989, Wright 2002, Neil 2003). This term is used to denote a narrowing of curriculum, such that an excessive amount of time is spent preparing students to take the test at the expense of subjects such as physical education, music, art, and social studies, which are not tested. As Wright (2002) argues, the preoccupation with teaching to the test also leads to drilling students on basic skills rather than focusing on broader learning and higher order thinking.

The pertinent question here is “Will the effect of testing be to force teachers to cut non-core teaching, such as cultural programs, and concentrate on core competencies?” The answer has been that, yes, in some cases this has occurred when high stakes are attached to test results, such as when results are highly publicized and it is used as a competitive process to garner funding and prestige. However, there is no evidence that this need be so when the purpose is diagnostic. In fact, a US study showed that testing with low to moderate stakes did not result in teachers significantly changing what was taught in classrooms; that is, teachers were not found to be “teaching to the test” (Firestone, Mayrowetz, and Fairman 1998).

This also raises the issue of aligning testing and curriculum. Standardized tests need to be constructed in consultation with educators such that they accurately reflect what students should know. Thus, teachers should not need to spend an inordinate amount of time preparing students for the test. Rather, the test should reflect basic skills that are already part of the curriculum. Of course, the diagnosis may mean that math skill teaching appears substandard and that would hopefully lead to a shift in priorities.

Cultural and Language Bias

Bordeaux (1995) argues that standardized tests based on general population norms and using multiple-choice questions are culturally biased. This is because standardized, norm-referenced tests are “normed” based on dominant culture student populations and will therefore tend to miss-measure minority and low-income students. Research presented by FairTest (1995) indicates that performance on standardized, norm-referenced tests is highly correlated with socio-economic status. Very early studies such as McDiarmid (1972) discussed the role that poverty, health, and nutrition, social conflict, language, and test motivation play in the interpretation of test data. These issues have remained problems into the new millennium (Fox 2001). Green and Griffore (1980) argue that standardized testing is often culturally biased because the people who choose the test content and wording of tests, as well as the students used to “try out” the test, are often white and middle class. Thus, success on the test often assumes, and requires, knowledge of white, middle-class culture (FairTest 1995).

Language skills are also correlated with test outcomes (Fortune 1985, Brescia and Fortune 1988). Students who have any structurally limited use of English, such as any group whose first language is not English, are known to be at a disadvantage in standardized testing (Fox and La Fontaine 1995). This disadvantage appears when we rank students or try and use psychometric approaches to determine the student's ability to learn. On the other hand, using the testing process as a diagnostic tool, to determine deficits that may restrict First Nations from full participation in the economy, makes this a less critical issue.

These problems are particularly relevant to the First Nations population in Canada. As we noted earlier, First Nations students are more likely to come from low socio-economic households and may have non-standard English backgrounds. This raises the concern that First Nations students in reserve schools may score lower on provincial standardized tests more because of cultural mismatch than because of a lack of knowledge of basic skills. Therefore, it will be important to ensure that testing instruments are culturally appropriate. Apthorp (2002, 13), in a recent review of the literature on standards-based practices for Native American students, concludes with a set of recommendations that place the issues of cultural appropriateness in an easy-to-understand framework. She says that success in school settings depends on "developing and/or adapting curriculum and learning materials that incorporate every day and culturally specific knowledge in ways that connect with content-area knowledge and skills" that you want the student to acquire (Apthorp 2002, 13–14).

Negative Psychological Effects on Students

The Canadian Psychologist's Association (CPA) makes an interesting point that public comparison and ranking of schools in Canada places a serious stressor on students and teachers. It raises the spectre of losing status within and between communities, and they note that such stress has led to problems across the US (CPA 2002). It has also been suggested that standardized testing can lead to increased dropout rates among low-scoring students. This has primarily been in relation to high-stakes testing, such as when students are not able to move on to the next grade unless they pass the test. In the US, instances of students being encouraged to drop out in order to increase schools' test scores are noted (Amrein and Berliner 2002).

The CPA proposal advocates that no ranking be done and only specific results be published. Care must also be taken in how test results are communicated to both teachers and students. Emphasis should be placed on understanding what the test scores do and do not convey, as well as how the new information can be used for improvement. While instances of increased dropout rates have been under high-stakes testing regimes, special attention should be paid to rates of non-completion.

Improper Comparisons

The first issue of concern is the potential problem of improper comparison across student populations. The results of tests for minorities, cultural subgroups and structurally disadvantaged persons, it is argued, cannot be compared with norms for general populations. This is primarily an issue in norm-referenced testing. Norm-referenced testing is when students are scored relative to their peers (e.g., a student may score in the top 5 percent) (Volante 2004). By definition, there will always be students whose performance will be considered poor by virtue of being in the bottom 5 or 10% of scores. As was discussed previously, students from lower socio-economic backgrounds have consistently been found to score lower on standardized tests. Therefore, it is likely that low-income students would continually be labelled as poor performers regardless of any improvements they may have made. The alternative to this is criterion-referenced testing, which is proposed here. Criterion-referenced testing involves clearly defining and articulating expectations so that students, parents and teachers know exactly what is expected at each level (Taylor 2001).

Another criticism of standardized testing is that results are often used to rank schools, as is done by the Fraser Institute in Canada. Comparison across schools, provinces or nations is seen as problematic (Canadian Teacher's Federation 2003a, 2003b, Fox 2001, Forbes 2000, FairTest 1995, Mcdiarmid 1972). This is because studies have shown that as much as 70% of the variation in student test scores is due to factors beyond a school's control, such as student, family and community level factors (Ungerleider 2006). For example, a school located in a low-income neighbourhood may have innovative, positive teaching strategies but appear to be performing poorly when ranked against other schools in higher-income neighbourhoods. Different schools also have different human and financial resources available to them. Therefore, focus should be on individual student and school improvement, and any broader comparisons should take contextual factors into account.

Assimilation and Forced Integration

The final major issue has to do with assimilation and forced integration. This is a very complex question. On the one hand the existence of a "test" that is common across large populations, such as a standardized process like the one we are exploring in this proposal, implies that the subject content of the test has been taught. The curriculum of the school is then somewhat determined and there is a pressure to conform to the dominant methods rather than addressing the roots of students' problems or the specific needs they have for specialized curricula (Canadian Teacher's Federation, 2003b). This has implications for the use of schools to maintain cultures and traditions among the First Nations peoples (Bordeaux, 1995). The issue of First Nations control of their curriculum therefore has to be addressed in the development of the plan to begin testing. However, as Demmert (2001) and Apthorp (2002) both point out, the core content

is teachable in many ways. The job of the teachers and schools is to transfer the basic numerical, scientific, and literacy skills to the students in a way that they can relate to and understand.

Pewewardy (1998) argues that testing should not be permitted to curtail the Indian educators and parents from developing appropriate educational materials and strategies. The inability to do that can be a contributor to a system of forcing integration and resurrecting the past feelings and realities around forced assimilation. Deyhle and Swisher (1997) point out that the commonly held and espoused maxim was that “tradition is the enemy of progress” and that educators, often with the best intentions, argued that assimilation into the mainstream would be the best solution to poor performance at school and in the job market. Angela Willetto (1999) is one of many researchers (see also Rindone 1988, Platero 1986) who draw quite the opposite conclusions based on empirical research. She found that Navajo students with the highest participation rates in traditional activities and who spoke Navajo language, scored the highest on achievement tests. Coggins et al. (1997) and Cummins (1996, 2000) also come to the conclusion that maintaining traditional languages and cultures is not related to poor educational achievement. We can conclude that the issue is not what is taught, nor specifically how it is tested. The issue is how do we make schools places of both basic skills acquisition and culturally appropriate learning?

Uses of Standardized Testing

While there have been many criticisms of standardized testing, the literature points to many ways in which test data can be used effectively. The following are four common uses of standardized tests.

Identify Strengths and Weaknesses

Identifying strengths and weaknesses involves using standardized testing as a diagnostic tool. As a diagnostic tool, test results can point out areas where schools or classes are doing particularly well. In these cases, best practices can be identified that are contributing to success in the content area. It is hoped that successful schools can share their best practices with others. Testing can also point to areas where schools or classes are not seeing the desired results. In these cases, the test results identify a problem to be further examined. As Buly and Valencia (2002) have shown, a failing score on a standardized test can be due to many different underlying reasons. Therefore, it is important that the test score not be seen as the answer, but as an indicator of an issue that needs to be further explored.

Motivate Change

Building on the use of testing as a diagnostic tool, once a diagnosis has been made it can motivate change. Schools and teachers may realize that a particular approach is not working and they need to try something new, or that a special

program may be needed for certain students who are having a particularly difficult time with the material.

The data provided by standardized testing can not only motivate instructional change, but also change among students. According to Natriello and Dornbusch (1984), when students are held to higher standards through testing it generally leads to higher class attendance and increased student effort. Bishop (1995) found that external examinations challenge students to do their best and encourages them to become more actively engaged in the learning process. Bishop also observed that in Canadian provinces with examination systems, parents were more likely to talk with their child about what they were learning in school.

Measure Change

Testing can and has been used to track trends over time. Depending on the frequency of testing, the results can be used to track change for an individual student, for a school, a region or the entire country. Testing can also be used to examine the effects of relevant government, school or community changes on performance. For example, the effectiveness of new educational programs or curriculum reform could be examined using trend data.

Supplemental Resource Allocation

Finally, standardized testing can also be used for resource allocation. There are different ideas and models of how this can take place. For example, Popham (2001) suggests that testing data can be used to allocate supplemental resources to low-performing schools. This money could be used for professional development, new educational materials, or for the development of educational programs to improve performance. Alternatively, supplemental funding could be allocated to those schools that show improvement as an incentive to improve performance.

Content Standards and Testing are Linked

The proposal to employ standardized test has two major anticipated outcomes. The first is diagnostic. We aim to determine what underlies the decreasing achievement between elementary and high school by first looking at the basic preparation of elementary level students. The second is to develop the skills and ability of First Nations students so they can redeem the rewards that better education gives the general population. Testing identifies weaknesses and strengths: policy change can build on the strengths and ameliorate the weaknesses. Conceptually, this is simple; however, it implies that the content of Aboriginal education will change. The content will be pushed to a higher (or different?) standard.

The testing process will simply help identify the weaknesses and strengths. It should encourage, through material incentive, a striving for better results in the classroom. The key to those better results is, according to much of the literature, revamping what is taught and how it is taught by involving the Aboriginal

community (Apthorp 2002, Fox 2000, 2001, Demmert 2001, Butterfield 1991, Charleston, et al. 1991). We cannot, nor should we, comment on how to fix problems and capitalize on strengths. That will be determined by the educators, those being educated, and the communities themselves.

The First Nations students will, on average, get lower test results than the general population. As Shields (1997) has noted, the common response will be denial and defensiveness:

Denial frequently focuses on the inappropriateness of standardized tests as a measure of student performance and ultimately leads to a call for a total rejection of all standardized testing. The argument emphasizes the fact that test bias makes it difficult for children from other than the mainstream culture to achieve the test norms. There is no doubt that test bias must be factored into both expectations and interpretations of test scores for students from specific contexts; however, because the bias of the tests remains constant, scores on standardized tests may provide useful information regarding overall performance trends within a school or a particular district. (103)

She continues

While denial rejects the validity of the tests as well as teacher responsibility, defensiveness emphasizes once again the nature of the students in the school—students with many of the characteristics that identify them as members of the “at-risk” population—low socioeconomic status, single parent families, home alcoholism, illiteracy, health problems. This stance situates the “problem” in the students, their homes, and their community, rather than in the institutions and practices of schooling. (104)

Shields argues that it is the knowledge that there is a public stigma potential from the test that discourages students and causes the problems. If she is correct, this would help to account for persistent research findings that the school achievement of Native American children declines dramatically after the fourth grade (Coleman 1966, Deyhle 1983, McShane 1983).

Deyhle’s perception was that as Native American students understood the significance of poor performance on tests, and they “tried to approach tests seriously, their efforts seemed futile. It was at this point that the Navajo students seemed to ‘give up’” (1983:77). Overcoming both the defensiveness and the denial are important steps to changing from an assessment that legitimizes (or delegitimizes) to one that empowers. (Shields 1997, 106)

This raises an important issue that much of the critique of the assessment process has to do with public comparisons made of students, schools, and communities, and the stigma attached with those comparisons. This indicates that the usefulness increases for testing when there is a private process of assessment and no public competition over results. Even where we see the effects of cultural bias, there are important consistencies with these effects, which can be assessed when interpreting the results.

The purpose of this paper is to propose standardized testing, outline a potential costing estimate, and point out the advantages that are potential to the successful

increase in educational attainment. It should be understood as such and not as a test of ability to learn.

Understanding Testing in a Different Framework

Many of the issues raised in the review of the literature are tangential to the plan being explored in this paper—for example, the issue of cultural and language appropriateness for the standardized tests. It is true that the science of testing tells us that there may be inappropriate or culturally difficult references in the tests. These may put First Nations students with poor English language skills at a relative disadvantage if the aim of the test is ranked competition with the general population. However, the proposal to test the First Nations students should be understood as a process to see how well the First Nations students are acquiring basic skills that will be needed in order to participate in the wider Canadian economy. If the testing indicates there is a deficit in English language literacy, then that is what we want to find out, so we can develop those skills among the students. From that perspective, we are interested in discovering which of the basic skills have the lowest acquisition and which are better developed.

Future Research

Michael Marker (2000) makes the point in the *Canadian Journal of Native Education* that it is going to be necessary to conduct qualitative studies of settings where First Nations enter into collaboration with dominant mainstream institutions. This would include looking at the situations where students chose between reserve schools and public schools to ascertain the differences in experience and achievement. Currently, the First Nations Cohesion Project at the University of Western Ontario is conducting such a pilot study.

Apthorp (2002) calls for a large scale multi-site research project on educational experience and outcomes, and Fox (2000) notes we need to study the range of assessments and tests that could be used and developed. These are going to be helpful, but we need not stay our quest for improvement while we wait for more data. We can proceed with the tools we have.

Standardized Testing of First Nations Students: The Alberta Experience

The Province of Alberta has monitored the results of testing for First Nations students in grades 3, 6, and 9 from 1998–99 to 2000–2001. In their vision statement, Aboriginal Policy Framework (September 2000), they point out that they are seeking ways to improve the success rates of Aboriginal students in the province, and decrease the dropout rates.

One diagnostic tool they wished to use is the success rates of First Nations students on the grade 3, 6 and 9 standardized tests given to all Alberta students.

They note that the data are limited, as they can identify only “those First Nations students who live on reserve or who have previously lived on reserve.” These students attend either a band school or have a tuition fee agreement with the school authority.

They report data for these students broken down into four subgroups. These include:

- 1 Band School Only: Students attend one or more band-operated schools.
- 2 Tuition Fee Agreement Only: Students have a tuition fee agreement with one or more school authorities outside the band.
- 3 Mixed: Students who attended a band school for part of the year and an outside school authority for part of the year.
- 4 Other: Students who had previously attended a band school or had a tuition agreement but not in the data gathering years. These are assumed to be living off-reserve.

Table A (see Appendix 3) indicates grade-specific levels of participation for the province. Alberta reports that the identified First Nations participation was 76.7% in grade 3, 71% in grade 6, and 53.3% in grade 9. The participation rate for all students was reported to be slightly more than 90% (Alberta 2003, 2). It is interesting to note that the rates decline as we move into the higher grades, driven particularly by absences from school on test days. Overall, First Nation students have a lower participation rate at all levels. The Alberta Learning Ministry notes in its assessment that the participation varies by school with some band schools at more than 90%. This would lend support to the argument that there are schools seeking to use the tests and be involved in the assessment process.

Table B (see Appendix 3) gives us a breakdown of the participation by type of school attendee. The same pattern observed in **Table A** holds, where First Nations students have lower rates of participation as we move higher in the grades. We can also see that the band school attendees have the lowest participation across the grades and the mixed category. This latter group includes part-year band school students who have the next lowest rates of participation.

Tables C and D (see Appendix 3) illustrate the results of the tests. **Table C** indicates the percentage of First Nations students meeting the “acceptable standard” according to Alberta Learning. Alberta notes (2003, 3) that 85% of the general student population are expected to achieve this acceptable standard. This was the case in most grades for most exams. However, in 2001, the general population scored 74.5% acceptable in grade 9 math, 79.7% in grade 9 science and 81.1% in grade 9 social studies. **Table D** breaks down the First Nations student population into subgroups based on where they take their schooling.

The tables illustrate that performance was much lower among the First Nations students. Again the pattern emerges that the success level declines as grade level advances. The best achievement among First Nations students was in grade 3,

where slightly over one-half of the students met acceptable levels; by grade 9, those rates drop closer to 25% in many categories. It is also noteworthy that the students do best in the English Language Arts exam and worst in science and math.

The subgroups follow the same patterns of achievement as we saw in the participation rates. Band school students are the lowest achievers. The strongest group was the “other” category, which is those assumed to be living off-reserve and attending non-band schools. These students are often two or three times more successful.

The last two tables look at the achievement at the top of the spectrum. **Table E** reports the First Nations Students who met a “Standard of Excellence,” and **Table F** breaks down the First Nations students who wrote and achieved the excellence designation by the school they attended. The Province of Alberta reports that approximately 15% of the general student population in any year on any test might be expected to meet the standard of excellence (2003, 5). Such was the case for 2001, except in math where 13.2% met the excellence standard.

Very few of the First Nations students met the standard of excellence. In many categories there were no students who met the standard, in many others it was less than 1%. When we examine **Table F** we can see that Grade 3 Tuition Fee Agreement students and “other” students did better on math. We can see a pattern where the students in the “other” category were generally the strongest, followed by the tuition fee students. Other students may well be attending private schools or the like but what is clear is that the lowest performers are those who attend band schools for a part year or full year. Finally, we provide a case study of a band-operated First Nations school that is currently administering Ontario’s EQAO exams to demonstrate some of the challenges and benefits of standardized test taking as experienced by one First Nations school (see Appendix 1).

The next section outlines the guiding principles of the proposal to encourage standardized test taking, we then outline the projected costs that would be associated with the several different models for funding the proposal.

The Proposal and Some Guiding Principles

The proposal has several practical aspects:

- 1 Offer funding on a per student basis for each student who writes the provincial standardized test for their appropriate grade. The funding will be for every band member, in elementary or high school, whether they go to a band school or to a public/Catholic school near the community. This provides an incentive to have the students write and infuses cash into the educational system to fund improvements, regardless of the results.
- 2 The band will be responsible for securing the exam results from the public/Catholic school boards and transferring the results to Indian Affairs. This should be possible given the tuition arrangements between INAC and the

provinces.

- 3 The test results will not be used to determine all funding, nor will communities be publicly ranked or have their test results released publicly. The models propose several scenarios. We have built in an additional sum that would be given for each student who meets minimum standards. This will encourage the bands to use the money to improve achievement without creating adverse community results. The models are based on varying the amounts paid to write and to succeed, and offer the possibility for making changes in these amounts to increase the emphasis on achievement over time. For example the transfer for writing could be reduced and the success payment increased over time. The models give policy-makers the option of beginning with public school only or doing the high school program as well. Other models can be developed where year-to-year improvements receive rewards, or that reward the public schools and band schools differently.
- 4 The results will be evaluated by teams of trained individuals specific to each province. The aim will be to diagnose the strengths and the deficiencies in basic skills acquisition.
- 5 Teachers and educators in the First Nations communities will be given the results of these tests and asked to make improvements based on the diagnosis. INAC will develop a plan and policies based on its assessment of the results. This could include the promotion of curriculum development projects, advisors for band education officials, or a range of other options.
- 6 The proposal is developed with potential problems in mind. For example, if INAC were to reward only band school attendees this could cause social disruption, where bands exert pressure on families to use the band school and not send children off-reserve.

The proposal can be divided into different options. For example, it may be possible to begin with the primary school populations first and move to secondary schools in the future. There is a basic and reasonable method of creating controls that have built-in norms based on First Nations populations. There are many communities where the students choose between the band school and the public school near the reserve. This allows us to compare the band school attendees with the public school attendees. It could be argued that developing a solid diagnosis at the primary level will permit the building of a foundation at that level on which to build.

The bands will be given funding for every student who writes the standardized tests. Therefore, the public school attendees will have to have the results passed from the public school to INAC through the band. This provides potential diagnostic possibilities concerning content of curricula in the two systems.

Models for Funding Participation in Standardized Tests

Generating Cost Models

For this analysis, two basic costing models are constructed. The first is based on test administration within elementary schools only; hence, only grades 3 and 6 are included. The second model assumes that tests are administered in grades 3, 6 and 9. These grades have been selected since they represent the typical grades in which standardized tests are administered in most provinces.⁴

Within each model, two elements or parameters are considered. The first element is based on a per student allocation for each student who writes a standardized test. The access to funds would have to be made equitable, which would mean developing mechanisms to deal with intra-provincial variations in testing regimes.

The second element is an amount provided for each student who achieves or exceeds the provincial “bar” or expectation for the exam.⁵ While standards vary from province to province, we have chosen to use the norms and achievement rates from the province of Alberta as a basis for constructing the models. A single province was selected as the basis of analysis in order to simplify the analysis. Detailed, province-by-province figures could be used, but a preliminary investigation suggested that such an exercise only increases the complexity of the analysis without changing the results substantially.

Alberta provides a good example case for several reasons. Its expectations for performance on standardized tests are not inconsistent with those of the other provinces. Furthermore, not only does Alberta have a substantial First Nations population, it is one of the few jurisdictions that has provided an analysis of Registered Indian students separate from the general school population.

The first phase of the model is relatively simple. We will assume that a nominal amount—say, \$100—is provided for each student writing the standardized test. The second phase will provide a more substantial amount for each Registered Indian student equalling or exceeding the base score for acceptability.

Table 7.1 summarizes the number of Registered Indian students in grades 3, 6, and 9, enrolled in either a band school or off-reserve school across Canada in the year 2000. Assuming a 100% participation rate, the cost for the test writing incentive (based on a fee of \$100 per student) is listed in **Table 7.2**.

In Alberta, the proportion of Registered Indian students writing the test is less than 100%, particularly in the on-reserve schools. Thus, these figures might be considered the “maximum exposure” for the program based on the current population of students. Using the estimated rates of writing from Alberta—about 40–71% for on-reserve schools and 65–81% for off-reserve schools—the actual amount would be approximately \$573,000 less for the elementary grades only and \$845,000 less for all three grades.⁶

Table 7.1: Number of Registered Indian Students in School

	On-reserve	Off-reserve	Total
Grade 3	6,072	2,586	8,658
Grade 6	5,064	2,510	7,574
Grade 9	4,467	3,746	8,213
Total	15,603	8,842	24,445

Table 7.2: Cost of Writing Test Incentive by Grade

	On-reserve	Off-reserve	Total
Grade 3	\$607,200	\$258,600	\$865,800
Grade 6	\$506,400	\$251,000	\$757,400
Total elementary	\$1,113,600	\$509,600	\$1,623,200
Grade 9	\$446,700	\$374,600	\$821,300
Total all grades	\$1,560,300	\$884,200	\$2,444,500

Table 7.3: Estimated Number of Student Attaining Acceptable Results

	On-reserve	Off-reserve	Total
Grade 3	1,214	1,552	2,766
Grade 6	1,013	1,506	2,519
Grade 9	893	1,236	2,130
Total	3,121	4,294	7,414

Estimating the cost of the program component for students achieving or exceeding expectations requires slightly more consideration. This comes about because the per student amount we wish to provide the schools is substantially larger and, under current conditions, the proportion of Registered Indian students passing the provincial norm is substantially lower than the average for the overall population. While the figures for Alberta vary across grade and year of testing, approximately 20% of the on-reserve elementary school students achieve or exceed the expected bar. This is also the situation with grade 9 students attending on-reserve schools.

The figures are substantially different, however, for students not attending band schools. About 60% of the Registered Indian students in both grades 3 and 6 exceed the provincial norms, while only about 33% of the grade 9 students do so. Extrapolating this pattern nationally, we would expect about 7,400 of the total 24,500 students to achieve an acceptable score. Broken down by grade and type of school this would work out as listed in **Table 7.3**.

Assuming an award of \$2,500 per student, the cost of this component of the program would be as indicated in **Table 7.4**. Combining this amount with the \$100 writing fee would result in the costs listed in **Table 7.5**.

Table 7.4: Estimate Cost for Students Achieving Acceptable Standard

	On-reserve	Off-reserve	Total
Grade 3	3,036,000	3,879,000	6,915,000
Grade 6	2,532,000	3,765,000	6,297,000
Total elementary	5,568,000	7,644,000	13,212,000
Grade 9	2,233,500	3,090,450	5,323,950
Total all grades	7,801,500	10,734,450	18,535,950

Table 7.5: Total Estimated Cost for Students Writing Exams Based on \$100+\$2,500 Model

	On-reserve	Off-reserve	Total
Grade 3	3,643,200	4,137,600	7,780,800
Grade 6	3,038,400	4,016,000	7,054,400
Total elementary	6,681,600	8,153,600	14,835,200
Grade 9	2,680,200	3,465,050	6,145,250
Total all grades	9,361,800	11,618,650	20,980,450

Table 7.6: Estimated Amounts Available per Student Achieving Acceptable Standard Based on Program Ceilings

Elementary Grades Only				Grades 3, 6, and 9			
Percent meeting standards	Expected number of Students	Program cost ceiling		Percent meeting standards	Expected number of students	Program cost ceiling	
		\$15 million (\$13.4 m available)	\$30 million (\$28.4m available)			\$15 million (\$12.6m available)	\$30 million (\$27.6m available)
30	4870	\$2747	\$5827	0.3	7334	\$1712	\$3757
40	6493	\$2060	\$4371	0.40	9778	\$1284	\$2818
50	8116	\$1648	\$3496	0.50	12223	\$1027	\$2254
60	9739	\$1374	\$2914	0.60	14667	\$856	\$1879
70	11362	\$1177	\$2497	0.70	17112	\$734	\$1610
80	12986	\$1030	\$2185	0.80	19556	\$642	\$1409

Thus, for the elementary schools, the total cost would be about \$14.8 million while for all three grades the total cost would be about \$21.0 million.

Should the incentives provided by this program succeed, the expected number of students achieving the provincial standards ought to increase substantially. In Alberta, the expectation for the general population is that 85% of the students will meet or exceed the bar. If the Registered Indian students achieved this overall success rate, the total cost for the two elementary grades would be approximately \$36.1 million, and \$54.4 million for the three grades combined.

To limit the liability of the program, it might be considered prudent to place a cap on the total amount available. Such a cap can not only be justified on the basis of limiting exposure, it also makes programmatic sense since it is likely that the incremental resources needed per student to achieve higher success rates is greater with smaller rather than larger percentages of students exceeding the norms. Furthermore, the larger per student amount provided at the lower rates of success will likely provide a greater incentive to help the students improve their performance.

For illustrative purposes, total program caps of \$15.0 million and \$30.0 million have been imposed. Assuming that \$100 will still be paid for each student writing (at 100% participation), this would leave \$13.4 million and \$28.4 million available respectively for the elementary grades only.⁷ Providing incentives for grades 3, 6 and 9 would result in \$ 12.6 million and \$27.6 million being available for distribution.

Table 7.6 shows the estimated number of eligible students and the amount available per student for overall success rates ranging from 30% of the student population to the general norm of 85% of the student population. Thus, for a total program cap of \$15 million and considering elementary grades only, \$2,700 would be available per student if only 30% of the students achieved the expected standard. This amount would decrease to \$970 per student with 85% of the students achieving the standard. The corresponding amounts would be \$1,700 and \$600 per student if all three grades are included in the program.

One factor that has not been considered in this modelling exercise is the impact of increasing numbers of students. First Nations communities have a higher than average birth rate which is resulting in a rapidly increasing student population relative to the rest of Canada. This would clearly result in the amount of monies available per student decreasing over time under a “capping” scenario. Similarly, we might expect the retention rate to increase slightly among the grade 9 students given the economic incentives to increase the number of students writing the exams and to do well. The program also allows for adjustments for inflation and population change.

Concluding Comments

This program proposal is an incentive. It is designed to create the positive conditions for First Nation students, schools, and educational structures, at the band level, to achieve increased successes through better programs of education.

How might the program act as an incentive and what might be accomplished? At the base of this proposal is a material incentive. We can see from the Alberta data presented earlier that the numbers of students who absent themselves from the standardized testing process is quite high. The transfer that is based on each student who writes creates a positive incentive to increase the student participation. The second level of incentive relates to achievement. Given that the transfers

of funds increase rapidly, with increases in the students who reach minimum acceptable levels, there is a positive incentive to build programs for success.

The key element here is that the levers for change stay in the community, with the parents, teachers and band. These stakeholders can use the funds in a variety of ways that are community sensitive with regards to aims within their cultural and social goals. The basic shape of the incentive system itself sets participation and achievement as the goal but the road to those achievements can vary widely depending on the community needs.

Funds can be directed to building teacher resources. The hiring of teachers, retention of teachers and/or the employment of tutors and educational assistants are all possible. We noted in an earlier section that parent involvement is highly correlated with success according to studies in other jurisdictions. Funds could be used to encourage greater parent-teacher and parent-school interaction. Elder involvement programs could also be developed. The issue of cultural survival and cultural appropriateness could be addressed. Funds could be used to develop curriculum materials that address these issues. Whereas in some jurisdictions, teaching Aboriginal languages have had to be limited, new programs could be funded. Weekend schooling in specialized subjects could be started. The potential is really limited only by the imagination and the needs of the community themselves.

The incentives program we propose here has the advantage of having built-in measurement systems and cost containment. Given that the models allow one to forecast maximum exposure financially, there are protections against overruns. Most importantly, given the standardized testing system, both INAC and the community themselves can see what the results of the program really are. Very successful initiatives can be popularized through the sharing of best practices which will help all communities. This focus on the positive is also a major issue with First Nations that see the negatives reported too often.

This proposal cannot be a panacea, but it has tremendous potential. It avoids costly creations of new structures that are divorced from the First Nations communities themselves. It is relatively easy to administer and puts the majority of any transfer payments into the hands of the people working on the problems.

Appendix 1

While First Nations schools are not required to participate in standardized assessments in most provinces, a number of schools have chosen to do so. These schools provide an opportunity to examine the issues that arise when implementing and administering provincial assessment systems in band-operated schools. In what follows, we examine the use of Education Quality and Assessment Office (EQAO) exams in one First Nations school in Ontario. While this is only one school's experience, it can provide insight into the issues, benefits and problems that can result from administering standardized testing in First Nations schools.

Methods

Semi-structured qualitative interviews were conducted with twelve teachers and one school administrator in April 2008, at a First Nations school in Ontario. The teachers interviewed taught grades 2 through 8, with the exception of one language teacher and two resource teachers. Five of the teachers were male and eight were female. Approximately half of the interview participants were Aboriginal. The majority of the respondents had experience with administering the EQAO testing, while for a few EQAO was relatively new and unknown.

Interviews lasted approximately 45 minutes and were conducted in a private room in the school during school hours. The interviews were recorded and then transcribed. Transcribed interviews were mailed to participants to give participants the opportunity to confirm the accuracy of the transcript and to add or clarify any points. The verified interview transcripts were then analyzed following Strauss and Corbin's (1990) coding process. This involved beginning by coding interview data into relatively open categories, progressively building more specific coding schemes and eventually developing more selective categories, showing the relations among categories, and validating the relationships with the data.

Teaching to the Test, Emotional Distress and Cultural Bias: Assessing Common Criticisms of Standardized Testing

Teachers were familiar with the common criticisms of standardized testing and had clearly thought about many of the issues before being asked in the interview setting. Below, we outline teachers' responses to and feelings about three of the common criticisms of standardized testing: teaching to the test, emotional distress, and cultural bias.

Teaching to the Test

Teaching to the test generally refers to spending a disproportionate amount of classroom time focusing on the subjects and content that will be covered on the

exam at the expense of other areas, and using the format of the test as a model for teaching. In the case of the EQAO exams, the subjects tested are reading, writing and math, and questions are generally in a multiple-choice and short-answer formats.

Teachers interviewed noted, positively, that since implementing EQAO, learning had become more integrated, in that basic skill development was included in all subject areas. For example, many teachers discussed working to include reading and writing strategies in subject areas such as science, social studies, and drama. In this way, some teachers argued that teaching to the test was not an issue as instruction time on non-tested areas did not decrease. However, the majority of teachers stated that a concern for doing well on the testing and the need to cover a lot of curriculum before administering the test necessarily leads to an increased focus on the subjects and subject content that they know will be covered on the exam. This was particularly the case in grade 3 and 6 classrooms, where teachers felt pressure to ensure that the curriculum content included on the test had been fully covered in class prior to the administration of the exam in May.

While literacy and mathematics are seen as important subjects, focusing on them to the exclusion of areas such as science, social studies, drama, music, and art was argued to take away from the fun, creative elements of schooling and to be particularly disadvantageous for students who excel in these areas. As one teacher stated:

That's the fun of school and sometimes that's the only level playing field that some kids have is to be, you know, if they are good in art, they just feel so proud that they can do something better than anyone else in the class. And a lot of times it's the ones that are lower levels of EQAO, they are struggling in school and this is where they excel and we are almost taking it away or discounting its importance.

The majority of teachers felt that there needed to be more balance in the amount of classroom time spent on different subject areas, though it was clear that the reality of the testing for grade 3 and grade 6 teachers made this a difficult task.

Testing and Emotional Distress

Standardized tests are often argued to be a significant source of stress and anxiety for both teachers and students. For the teachers interviewed who had observed students taking the EQAO exams, most noted that some students would become upset and anxious before and while writing the test. However, many teachers pointed out that this was not specific to the EQAO exam, but that some students would experience test anxiety with a math, language or science test as well. That is, some students will experience nervousness and anxiety regardless of the type of test being administered. The degree of emotional distress experienced by students often has more to do with how the test is framed and explained than due to the actual content of the test itself. One teacher explained:

I really focus on making it as stress free as possible, as far as building up to it. It is like "aw, guys it's just an hour in the morning and then we are going to have fun the rest of

the day.” And they don’t get that stressed out about it, building up to the tests. There is definitely nervousness, but I think that’s always going to be there, but I try and really actively attempt to diffuse it as well as I can, to make it no big deal.

Teachers felt that not making a “big deal” out of the test could help to reduce students’ stress and nervousness. Further, some noted that ensuring students were well prepared and understood the purpose of the test was also important to easing anxiety and making the experience as minimally stressful as possible.

In terms of the anxiety that standardized testing creates for teachers, the majority of the teachers who taught grades in which the testing is administered found testing to be a very stressful time. While they appreciated that the testing had recently been relabeled the “primary test” and “junior test” as opposed to the “grade 3 test” and “grade 6 test” in recognition that preparing students was a collaborative effort, they still experienced stress and pressure in their desire for their students to succeed. Positively, none of the teachers administering the testing felt external pressure from administration, the board, or other teachers to improve students’ scores and did not feel that they would face negative repercussions if the test results were poor. Rather, many teachers noted that the school worked as a whole to develop strategies to improve on areas where test results showed weakness, as opposed to promoting test taking strategies or encouraging teachers to teach to the test.

Test Format and Questions: Culturally Biased?

Teachers had mixed views about the cultural appropriateness of EQAO exams for their students. While some felt that recent improvements in the test had removed any concern about cultural bias, others stated that the wording of certain questions and the format of the test itself can sometimes disadvantage First Nations learners. Test questions deemed to be problematic were those that involved references to aspects of urban living, such as riding a subway, reading a bus schedule, or walking down a sidewalk, as well as questions that included ethnically diverse names. Students can often get “stuck” on these questions, and given that teachers are not allowed to offer any assistance—for example a teacher would not be able to tell the student that the unfamiliar word is a name—the student can lose time or answer a question incorrectly because of a trivial element of the test question. However, almost all teachers who talked about biased test questions pointed out that this was not a concern only for First Nations students, but was more of a socio-economic or urban/rural issue. It was also noted that there are typically only a couple of problematic questions any given year, and that test bias such as this does not completely determine test results.

In terms of the format of the exam itself, concerns were raised that the way in which the test is administered conflicted with the style of teaching that is currently being encouraged. One teacher articulated this particularly well:

My big problem with EQAO is the fact that good teaching practice these days is group experience. Kids working to explore, find answers, critical thinking, working with every-

thing from whole groups to pairs, triads, these sorts of things. And when EQAO rolls around, it is, ok, everybody at their own desk, dividers, no one is allowed to talk, no one is allowed to discuss anything. The test goes against everything we are being taught on how to teach these guys. It's the exact opposite style of what we are doing on a daily basis.

Thus, there is seen to be a large disconnect between current "best practice" teaching methods and the format of the EQAO assessment. It was also noted that First Nations students often demonstrate their knowledge better in hands-on activities and by exploring and finding answers as opposed to the paper and pencil format of EQAO. Participants did not see any clear solutions to these issues, as many acknowledged that it would be difficult to administer a standardized exam that reflected the current teaching practice of using group work and that involved more hand-on activities.

It is important to note that even participants that felt that there was some cultural bias in the EQAO assessments did not feel that the testing should be stopped for this reason or that it was creating cultural bias in their teaching practices. While the core content that is taught in classrooms may need to be similar to the public school system due to the testing, the way in which the content is taught can and needs to be culturally relevant:

So a lot of people don't understand the importance or results of that standardized test and they think, oh that's just a biased test, and our kids don't need to know that. Well, they are not going to learn the same way, they are not going to learn the information the same way as everybody else, I'm going to teach it to them in a way they understand it . . . using the strategies that they are comfortable with to get them up to the next level. And I think a lot of parents, and maybe some teachers I guess, think well that's not for our students. We don't need to do that. I think we need to do it, we are just going to do it in a different way to get there.

Administering a standardized exam presupposes that certain curricular content has been taught. However, as this teacher suggests, the testing does not have to determine how students are taught this content on a day-to-day basis. Teachers can adapt the curriculum and teach it in a way that is appropriate for their students.

One idea that has been considered is to develop a test specifically for First Nations students. When participants were asked whether this would be a positive development, responses were mixed. A few teachers did not want a test devised specifically for First Nations, noting the great cultural diversity among First Nations themselves, as well as a concern that parents may see it as a second rate test. However, about half of the participants felt that the possibility of creating a test specifically for First Nations schools that would better reflect their students' cultural backgrounds should be explored. For the time being, the school does not have the resources necessary to create and administer their own standardized assessment that is personalized to their student community and it is not immediately clear what body or organization could take on such a task.

Benefits of Testing

Over the course of the interviews, many positive aspects of administering the EQAO testing emerged. These benefits have been lumped into three main categories: increased resources and funding, improved classroom instruction, and better preparation for high school.

Increased Resources and Funding

By far the most often cited benefit of using EQAO was the extra resources and funding that administering the test has accrued to the school. Given the widespread under-funding of First Nations elementary institutions, schools such as this one need to battle for funding year after year and be creative in how they seek out resources. Both teachers and administrators argued that administering EQAO gives the school administration hard data that is recognized by provincial and federal authorities that can demonstrate the schools' needs. This data can be used to show that the school requires extra support services and to lobby for additional educational resources. The year-over-year results also provide a mechanism to demonstrate the improvement that the extra resources are making, which helps in turn to garner further resources and funding. That is, the school can show funding agencies that they are putting the extra dollars to good use and that future funding will be put to good use as well.

For this school, the ability to clearly demonstrate the needs of their students through EQAO has meant extra educational assistants; additional time with speech pathologists, counsellors, and other specialized second-level services; more professional development for teachers; and a new developmental reading assessment program that includes a book room and a literacy coach that works with the primary teachers. One teacher noted that they now had a full time educational assistant in math, which was desperately needed, because of the test results. Reflecting the feelings voiced by the administration and many of the teachers, one participant commented:

I think the results have been an eye opener, that we can say, ok, see we need a speech pathologist, we need EAs in our classrooms, we need counselling, we need all these other specialized services. So it's been used as a tool to get funds, to get people, to get help for our students. So that's what I think the main positive thing is as a result of doing these tests ... We can completely show these are our scores, this is what we need. It's all concrete.

In the current reality of unstable funding and continually battling for resources, the test results are being used as a means to garner additional funds to meet the schools' needs. For many of the teachers, it is these types of benefits that make participating in the testing most worthwhile.

Improved Classroom Instruction

Another positive aspect of administering EQAO cited by many teachers was that it had improved their classroom instruction techniques and strategies. It was

argued that participating in EQAO and working to prepare students for the test has helped to keep teachers current with the curriculum and with best teaching practices. For example, one teacher noted that the leveling EQAO uses to grade responses had encouraged them to teach students how to build better answers in steps. According to this teacher:

It [EQAO] helped us to understand I think as teachers, how to get the kids to communicate better, but in stages, as opposed to saying ‘ok, this is the perfect sentence and this is a perfect paragraph,’ and never really showing them how to build up to that.

By teaching students new literacy skills in stages, students can better understand the process of building upon elementary skills to improve their oral and written communication.

Classroom instruction has also been improved through the professional development that has accompanied the implementation of EQAO. Due to EQAO, teachers of grades 3 and 6 have been sent to professional development days with a local provincial school board to learn more about the testing and how to ensure students are well prepared. One teacher in particular noted that this had led them to adjust their teaching style:

I have [had to adjust my style of instruction] but I think for the better. I think a lot of the things I have learned through professional development and speaking with others is really best practice ... I think the things I do in the classroom aren’t necessarily for EQAO, I think it helps the kids overall. It’s best teaching practice, but it’s come about because of EQAO.

Thus, EQAO had led to additional professional development that has kept grade 3 and grade 6 teachers current on new teaching strategies and best practices. Whether and how this gets filtered to other teachers in the school is unclear, but ideally the best practices would be shared with and discussed amongst the teachers who did not receive the professional development as well.

In addition to the best practices learned from EQAO focused professional development, administering EQAO has helped to provide both individual staff, and the school as a whole, direction and goals to work towards. The test results are used by many teachers to see where students are having difficulties and where instruction needs to be improved. While few reported that they used EQAO test scores to assess where individual students excelled or needed improvement, teachers were more likely to look at the schools’ overall results and use these to focus on areas where students had done poorly.

At the school level, this has been translated into division-wide long-term literacy planning in the primary grades, a key area where EQAO has shown students are struggling. A literacy coach works with the teachers to develop a cohesive plan to improve students’ literacy. These meetings and the planning has also led to improved consistency among the grades in terms of what is being taught from year to year. Primary teachers reported that they are working towards teaching the same literacy units at the same time, which will ensure that students

can build upon what they have learned year after year and will allow teachers to work together and draw on each other as they go through units simultaneously. While this has been a positive development, a number of teachers noted that they would like to see even more done with the test results in terms of school and division-wide strategizing and planning.

Better Preparation for High school

As in many First Nations communities, there is no high school on the reserve where this elementary school is located. Therefore, students will have to attend a nearby provincial high school outside of their community after they graduate. About half of the teachers interviewed raised this issue and felt that administering EQAO helped to better prepare their students for attending high school off-reserve. One element of this was a recognition that once students reach high school, they will have to write an EQAO mathematics assessment in Grade 9 and a literacy test in Grade 10, which they will need to pass to graduate. By using the EQAO testing in elementary school, it is thought that the students will be familiar with the testing and will be more likely to have the skills necessary to do well on the secondary school assessments. One teacher explained:

It [EQAO] has been a positive experience, because we're tired of hearing about how our kids are going into the city and failing. That really concerns us, when they hit high school and they don't have these skills, a lot of them are dropping out. We want to prepare them and have them meet the province, you know, head on, and have the skills that everybody else does to survive in that environment.

Administering EQAO has been one way to equip students with some of the skills that will be necessary for success in the provincial high school system. That is, by using EQAO, students at this school become familiar and more comfortable with both the format and content of this type of assessment. A few teachers reported that these feelings have been echoed by parents, who are worried about whether their children will be fully prepared to integrate into the provincial school system. With EQAO, parents can now see how their child fares on a test that is taken by all students in Ontario and can see that their child is learning comparable skills to those taught in the provincial school system.

Additionally, it was noted that since implementing EQAO communication and resource sharing between the school and the local provincial school board has increased. The grade 8 teachers at this school now meet with teachers and administrators from the local high school along with other grade 8 teachers from feeder schools to talk about EQAO math results and discuss areas to focus on and strategies to prepare students for the grade 9 EQAO math assessment.

Challenges

Implementing and administering EQAO assessments in this First Nations school was certainly not an easy undertaking. Both teachers and administrators noted that

the in the beginning, the testing created a lot of problems and negative feelings in the school. This was likely in large part due to the way the testing was implemented, as it was sprung on teachers, students, and parents with little advance warning by a previous administration. Teachers did not have time to understand the process or prepare students and it generated a lot of confusion and anger. While this was a unique situation, the school's experience can illuminate some of the challenges that First Nations schools may face when introducing and using a provincial assessment system.

Low Initial Test Scores

When EQAO was first implemented at this school, the test scores were alarmingly low. Not only did this hurt teacher morale, it also caused both parents and the education council to question the effectiveness of the administration and the school as a whole. While the administration of the day was let go, the current administration has also faced a lot of heat over the test scores. According to one participant, there were "bitter, bitter battles for the first two years." This can be a very trying situation and could lead to a desire to abandon the testing completely. Participants noted that there needs to be a strong administration in place that can withstand the criticism and questioning and can use the results for planning.

One positive benefit of the low initial scores, however, was that it united parents and the community and promoted action to improve the education students were receiving. For example, after the initial test results came in, the community offered additional funding to get extra supports in place to assess and assist students. Thus, when test scores are initially low, it can be quite challenging for the school, but the low scores can also motivate action and change.

Finally, participants noted that test scores have to be put into perspective. There are other types of learning and knowledge that need to factor in to an assessment of a student's performance or the overall quality of a school, especially for First Nations schools where the EQAO tests clearly do not measure all aspects of schooling that are important to First Nations communities. As one teacher stated, the testing is not the "be all, end all." Rather, test results need to be understood as one measure among many that can be used to assess student and school performance in the areas that are tested. Reflecting this understanding, teachers often used the term "snap-shot" when discussing EQAO scores, suggesting that test scores are understood to be an indicator of performance on selected measures at one point in time.

Publication of Assessment Results

Since 2003, the Fraser Institute has been publishing an annual "School Report Card" for elementary and secondary schools in Ontario. The report involves ranking all schools in Ontario based on their EQAO results, including the few First Nations schools that administer the testing. While some teachers were not aware of the Fraser Institute's report, for those that were, the publication of the

school's test results and its inclusion in the rankings was viewed as a challenging aspect of administering EQAO testing. Since implementing the testing, the school has been ranked quite low and these results often get picked up by both national and local media outlets, bringing negative attention to the community. Commenting on this, participants stated:

That's been very difficult for the community to hear and see the comparisons. I think this is one of the, the main point or stress areas for a First Nations community with EQAO, is the community doesn't want to be compared to others.

When you get your reputation bandied about across the radio waves, why would they want to put themselves in that position? So it does take a brave stand to do it.

These comments suggest that the very fact that First Nations schools are included in the report and ranked against other schools can discourage a school from participating in the testing. At this school, the rankings have led both parents and band council to question the quality of the education being provided at the school and some felt that it was also discouraging for both teachers and students to see their school ranked poorly compared to other schools in Ontario.

An understanding of the various factors that can affect standardized test scores is important in these situations. It has been shown that aside from the quality of the school itself, factors such as socio-economic status and language skills can have a large impact on standardized test scores. In First Nations schools where English is not the first language of many students and/or where many of the students come from low socio-economic backgrounds, comparisons with other schools can be invalid and unfair. Thus, many teachers felt that the school should primarily be concerned with comparing their own results to results from previous years.

Participants also pointed out a number of problems with the Fraser Institute's rankings themselves. Firstly, First Nations schools did not begin administering the EQAO testing until significantly after it was begun in the rest of Ontario. Test results are bound to be lower as teachers and students become accustomed to the testing and learn from and respond to previous test results. Comparisons with schools that have been administering the test for far longer are therefore seen as unfair and invalid. Secondly, participants noted that the ranking of schools also masks the real improvements that are being made within the school. Finally, many felt that because the school purchases the test, they should have ownership over the results and should be able to control where, when, and to whom the school's test scores are released.

Conclusion

Due to the challenges that First Nations schools can face when implementing a provincial assessment system, participants felt that having a strong, stable school administration and stable community leadership were essential to successfully implementing and using standardized testing in a First Nations school. It was also

argued the administration needs to have the support and trust of teachers, parents, the school council, and the entire community. It is up to the administration to ensure that these stakeholders understand why the testing is being implemented, how the scores should be interpreted and how the results can be used. This is especially vital for teachers, as many participants noted that having all teachers onboard, working together and having continuity throughout the grades in terms of what is being taught are important elements of making the testing a positive experience for the school, and is something that this school was continuing to work towards. It is important to note that many of the participants stated that they were initially against the use of the testing in their school, but as they came to better understand the process and saw how it was being used they began to appreciate its role as an instructional tool.

While there is certainly an uneasiness, among about half of the teachers, about the testing and its appropriateness for a First Nations school, the majority still felt that despite these issues, administering the testing has been a positive experience. Through administering EQAO assessments, the school has been able to use the results to lobby for and receive additional funding and resources, to inform classroom, division, and school-wide planning, and to prepare students for their EQAO exams in high school. Using a provincial standardized exam may not be the ideal situation, but since the school does not have the resources or supports necessary to develop and administer a more culturally appropriate test and because the school has been able to use the testing to garner much needed resources, in the current climate it is accruing benefits to the school that would not otherwise be realized.

Appendix 2

**U.S. Bureau of Indian Affairs
Office of Indian Education Programs
Bureau-Wide Annual Report Card
2005 – 2006**

Enrolment

	All Students		LEP		Special Ed	
	Male	Female	Male	Female	Male	Female
Total	22,872	22,115	8,405	7,551	4,914	2,498
M/F		44,987		15,956		7,412

Average Daily Attendance Rate, Graduation Rate and Dropout Rate

	All Students	LEP	Special Ed
Avg. Daily Attendance Rate K–8	91.00%	90.93%	89.77%
Avg. Daily Attendance Rate 9–12	84.45%	85.04%	85.05%
Graduation Rate (High School)	50.69%	48.94%	47.84%
Dropout Rate (High School)	10.35%	12.61%	10.31%

Student Achievement

Language Arts

	Number of Students	Participation Rate	Basic %	Proficient %	Advanced %	Proficient + Advanced %
All Students	1532	99.61%	52.49%	37.48%	10.03%	47.51%
Males	728	99.59%	57.66%	34.90%	7.45%	42.34%
Females	804	99.63%	47.82%	39.83%	12.36%	52.18%
Race and Ethnicity						
Native American	1532	99.61%	52.49%	37.48%	10.03%	47.51%
Other Groups						
IEP	429	60.84%	80.08%	15.71%	4.21%	19.92%
Limited English Proficient	978	99.90%	52.81%	36.85%	10.34%	47.19%

Two-Year Trend in Language Arts

	Number of Students	Participation Rate	Basic %	Proficient %	Advanced %	Proficient + Advanced %
2005-2006	1532	99.61%	52.49%	37.48%	10.03%	47.51%
2004-2005	16288	93.21%	52.81%	43.84%	3.35%	47.19%

Reading

	Number of Students	Participation Rate	Basic %	Proficient %	Advanced %	Proficient + Advanced %
All Students	23423	96.72%	63.26%	33.95%	2.79%	36.74%
Males	11767	96.61%	67.71%	29.90%	2.39%	32.29%
Females	11656	96.83%	58.78%	38.02%	3.20%	41.22%
Race and Ethnicity						
Native American	23423	96.72%	63.26%	33.95%	2.79%	36.74%
Other Groups						
IEP	4600	93.35%	85.21%	13.88%	0.91%	14.79%
Limited English Proficient	8851	96.64%	75.12%	23.52%	1.36%	24.88%

Two-Year Trend in Reading

	Number of Students	Participation Rate	Basic %	Proficient %	Advanced %	Proficient + Advanced %
2005-2006	23423	96.72%	63.26%	33.95%	2.79%	36.74%
2004-2005	24196	97.31%	61.60%	35.24%	3.16%	38.40%

Math

	Number of Students	Participation Rate	Basic %	Proficient %	Advanced %	Proficient + Advanced %
All Students	23796	96.89%	70.18%	25.96%	3.86%	29.82%
Males	11898	96.70%	71.49%	24.66%	3.85%	28.51%
Females	11898	97.08%	68.87%	27.26%	3.87%	31.13%
Race and Ethnicity						
Native American	23796	96.89%	70.18%	25.96%	3.86%	29.82%
Other Groups						
IEP	23796	96.89%	70.18%	25.96%	3.86%	29.82%
Limited English Proficient	23796	96.89%	70.18%	25.96%	3.86%	29.82%

Two-Year Trend in Math

	Number of Students	Participation Rate	Basic %	Proficient %	Advanced %	Proficient + Advanced %
2005-2006	23796	96.89%	70.18%	25.96%	3.86%	29.82%
2004-2005	24335	97.45%	65.21%	30.80%	3.99%	34.79%

High-Quality Teachers

A1	Full-time teaching positions available in the current school year:		3838
	Full-time teachers new to the school:		537
	Unfilled vacancies for full-time teachers:		83
	Total Number of Teachers:		3755
A2	Teachers at the end of last SY:		4010
	Not offered contracts: 172 Teachers retired: 106		
	Teachers returning:		3451 (86.06%)
B	Number of core area teachers:		3227
	Highly qualified core area teachers:		3019 (93.55%)
C	Average school principal tenure (years):		4.28571428571429
D	Number of core area classes taught:		7944
	Core area classes taught by highly qualified teachers:		6739 (84.83%)
	Teachers receiving high-quality professional development:		3903
	Core area teachers' qualifications in the use of technology for instruction		
	Basic	678 (21.0%)	
	Proficient	1715 (53.15%)	
	Advanced:	834 (25.84%)	
E	Full-time paraprofessionals employed:		1548
	Fully qualified paraprofessionals employed:		1394

Appendix 3

Table A: Average Participation of First Nations Students in the Grades 3,6, and 9 Achievement Testing Program 1998-99 to 2000-2001*

	Grade 3		
	1998/99	1999/00	2000/01
# Enrolled	1472.5	1607.0	1657.0
# Writing	1198.5	1257.5	1270.5
% Writing	81.4	78.3	76.7
% Excused	6.3	7.2	6.0
% Absent	12.3	14.5	17.3
	Grade 6		
	1998/99	1999/00	2000/01
# Enrolled	1392.5	1409.8	1465.8
# Writing	978.0	1077.8	1077.8
% Writing	70.2	76.4	71.0
% Excused	7.6	7.5	5.0
% Absent	22.2	16.1	24.0
	Grade 9		
	1998/99	1999/00	2000/01
# Enrolled	1259.3	1241.3	1342.3
# Writing	649.5	783.5	715.3
% Writing	51.6	63.1	53.3
% Excused	5.7	8.1	12.5
% Absent	42.8	28.8	34.3

*The data represent the average across the subjects within each grade.

Source: Alberta Learning: Government of Alberta 2002

**Table B: Average Participation of First Nations Students in Grades 3, 6, and 9*
Achievement Testing Program 1998/99–2000/01 by Subgroup**

	Subgroup												
	1. Band School Only			2. Tuition Fee Agreement Only			3. Mixed			4. Other			
	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	
Grade 3	# Enrolled	628.0	694.0	752.0	552.0	659.5	567.5	80.0	112.0	94.0	212.5	141.5	243.5
	# Writing	494.0	497.0	536.0	463.5	559.5	457.0	60.5	88.5	70.0	180.5	112.5	207.5
	% Writing	78.7	71.6	71.3	84.0	84.8	80.5	75.6	79.0	74.5	84.9	79.5	85.2
	% Excused	3.8	5.0	1.7	8.4	8.6	10.6	10.0	4.5	4.3	6.8	13.8	9.4
Grade 6	% Absent	17.5	23.3	27.1	7.6	6.6	8.9	14.4	16.5	21.3	8.2	6.7	5.3
	# Enrolled	521.0	542.8	601.5	568.0	623.0	508.5	59.0	80.5	99.0	244.5	163.5	256.8
	# Writing	324.5	392.3	358.0	437.8	494.0	411.3	35.8	59.5	61.8	180.0	132.0	209.5
	% Writing	62.3	72.3	59.5	77.1	79.3	80.9	60.6	73.9	62.4	73.6	80.7	81.6
Grade 9	% Excused	3.7	3.2	1.4	10.0	10.9	7.8	10.2	4.0	2.3	9.6	10.2	9.1
	% Absent	34.0	24.6	39.1	12.9	9.8	11.3	29.2	22.0	35.4	16.8	9.0	9.3
	# Enrolled	480.0	528.0	560.3	497.0	484.8	491.3	83.0	97.3	83.3	199.3	131.3	207.5
	# Writing	193.3	318.5	225.5	316.3	337.3	317.0	22.5	45.5	35.8	117.5	82.3	137.0
Grade 9	% Writing	40.3	60.3	40.2	63.6	69.6	64.5	27.1	46.8	42.9	59.0	62.7	66.0
	% Excused	2.7	4.2	9.8	5.8	11.4	16.7	4.2	7.5	9.0	13.2	12.2	11.0
Grade 9	% Absent	57.1	35.5	49.9	30.6	19.0	18.8	45.8	45.8	48.0	27.9	25.1	23.0

* The data represent the average across the subjects within each grade

Source: Alberta Learning; Government of Alberta 2002

Table C: The Percentage of First Nations Students Who Wrote the Test and Met the Acceptable Standard*

	Grade 3		
	1998/99	1999/00	2000/01
English Language Arts	55.3	57.4	53.6
Mathematics	48.9	52.6	50.2
Science	–	–	–
Social Sciences	–	–	–
	Grade 6		
	1998/99	1999/00	2000/01
English Language Arts	38.6	41.2	38.7
Mathematics	34.8	38.4	35.5
Science	39.8	38.6	40.1
Social Sciences	33.4	35.5	35.9
	Grade 9		
	1998/99	1999/00	2000/01
English Language Arts	47.0	46.7	46.4
Mathematics	22.5	20.5	21.2
Science	27.0	21.5	23.7
Social Sciences	31.4	25.0	30.6

*85% of Alberta students writing achievement tests are expected to meet the acceptable standard.

Source: Alberta Learning: Government of Alberta 2002

Table D: The Percentage of First Nations Students Who Wrote the Test and Met the Acceptable Standard 1998/99–2000/01* by Subgroup

	Subgroup												
	1. Band School Only			2. Tuition Fee Agreement Only			3. Mixed			4. Other			
	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	
Grade 3	English Language Arts	41.7	42.2	31.7	65.3	68.0	68.9	57.6	55.2	50.0	65.4	72.1	76.2
	Mathematics	41.1	43.3	36.2	53.0	58.5	62.1	48.4	44.4	37.8	59.9	71.9	65.6
	English Language Arts	22.1	24.6	22.5	45.5	50.1	46.5	31.3	31.0	29.3	51.4	59.5	54.2
Grade 6	Mathematics	15.0	20.9	20.1	44.0	47.8	40.8	30.6	27.1	30.5	48.3	60.2	53.3
	Science	28.0	24.6	28.0	44.3	44.7	43.6	30.8	26.2	37.3	52.2	63.4	54.2
	Social Studies	19.2	21.4	22.9	40.5	43.1	41.6	22.2	21.7	27.0	45.4	56.4	49.3
Grade 9	English Language Arts	23.8	21.8	28.3	55.2	63.7	52.1	40.0	39.5	35.3	57.3	66.2	62.5
	Mathematics	6.8	9.8	8.6	29.2	29.1	24.8	20.0	6.4	7.9	31.8	35.4	38.8
	Science	10.5	7.5	12.8	34.6	33.7	28.0	8.3	16.0	2.6	40.5	35.7	37.8
	Social Studies	12.7	11.2	11.8	40.1	34.2	38.4	23.1	21.3	15.2	42.4	41.9	47.4

* 85% of Alberta students writing achievement tests are expected to meet the acceptable standard.

Source: Alberta Learning; Government of Alberta 2002

Table E: The Percentage of First Nations Students Who Wrote the Test and Met the Standard of Excellence* 1998/99–2000/01

	Grade 3		
	1998/99	1999/00	2000/01
English Language Arts	1.3	1.5	1.7
Mathematics	4.2	4.2	3.9
Science	–	–	–
Social Sciences	–	–	–
	Grade 6		
	1998/99	1999/00	2000/01
English Language Arts	1.7	1.3	0.8
Mathematics	1.7	1.2	1.5
Science	2.5	2.1	2.2
Social Sciences	1.6	1.4	0.9
	Grade 9		
	1998/99	1999/00	2000/01
English Language Arts	1.0	0.7	1.6
Mathematics	1.0	0.8	1.6
Science	0.8	0.2	0.7
Social Sciences	1.0	0.9	0.7

*15% of Alberta students writing achievement tests are expected to meet the standard of excellence.

Source: Alberta Learning: Government of Alberta 2002

Table F: The Percentage of First Nations Students Who Wrote the Test and Met the Standard of Excellence 1998/99–2000/01* by Subgroup

	Subgroup												
	1. Band School Only			2. Tuition Fee Agreement Only			3. Mixed			4. Other			
	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	1998/99	1999/00	2000/01	
Grade 3	English Language Arts	0.4	0.4	0.0	2.4	1.8	2.2	0.0	0.0	1.5	1.1	6.3	4.9
	Mathematics	2.0	2.0	1.6	6.2	5.0	5.6	3.2	2.2	1.4	5.5	11.4	7.2
Grade 6	English Language Arts	0.0	0.3	0.3	2.1	1.2	0.5	0.0	1.7	1.7	4.0	4.6	2.0
	Mathematics	0.3	0.0	0.3	2.3	1.4	1.2	0.0	0.0	0.0	3.4	4.5	4.8
	Science	0.3	0.3	0.5	3.4	2.5	2.3	0.0	0.0	1.5	4.9	6.9	5.1
	Social Studies	0.3	0.0	0.3	2.3	2.2	1.0	0.0	0.0	0.0	2.7	3.8	2.3
Grade 9	English Language Arts	0.0	0.0	1.0	0.9	0.9	1.0	0.0	0.0	0.0	2.4	2.6	4.4
	Mathematics	0.0	0.0	0.4	1.3	0.6	1.3	0.0	0.0	0.0	1.8	4.9	4.5
	Science	0.0	0.0	0.4	1.6	0.3	0.0	0.0	0.0	0.0	0.0	1.2	2.8
	Social Studies	0.0	0.0	0.0	0.9	0.6	0.0	0.0	0.0	0.0	3.2	5.8	3.7

* 15% of Alberta students writing achievement tests are expected to meet the standard of excellence

Source: Alberta Learning; Government of Alberta 2002

Appendix 4

Provincial Standardized Testing Programs

Province-Wide Assessment Programs		
Location	Grade Tested	Type of Test
British Columbia	4,7 & 10	Provincial Learning Assessment Program (PLAP)
	4,7 & 10	Foundation Skills Assessment (split off from PLAP)
	12	Provincial Examination Program
Alberta	3,6 & 9	Provincial Achievement Testing Program
	12	Diploma Exams
Saskatchewan	Varies with core curricula (random sample testing)	Curriculum Evaluation Program
	5, 8, & 11 (random sample testing)	Program Learning Assessment Program
	12	Provincial Diploma Exams
Manitoba	6 (optional school division may implement)	Standards Test
	Senior 1, grade 9 (optional school division may implement)	Standards Test
	Senior 4, grade 12 (compulsory)	Standards Test
	12	Provincial Examinations (beginning 2000-01, replaced with standards test)
Ontario	3	EQAO , Reading, Writing and Mathematics Assessment
	6	EQAO Grade Assessment
	9	EQAO Mathematics Assessment
	10	EQAO Test of Reading, Writing Skills
Quebec	Elementary 6 & Secondary III	Compulsory Examinations
	Secondary I & IV	Uniform Ministry Examinations
	Elementary 3 & 6 (secondary level: optional for school boards & private schools.)	Complementary Examinations

New Brunswick (English)	3 & 5	Provincial Assessments
	8 (also; 10 not successful on 1st attempt & 11 not successful on 2nd attempt	Provincial Assessments
	12	Provincial Assessments
	11	Provincial Diploma Examination
New Brunswick (French)	4 & 8	Programme d'évaluation Provinciaux
	10, 11, & 12	Examens de fin d'études secondaires (EFES)
Nova Scotia	6	Program of Learning Assessment for Nova Scotia (PLANS)
	12	Program of Learning Assessment for Nova Scotia (PLANS)
Prince Edward Island	12 (students taking designated courses)	Grade 12 Exams
Newfoundland/Labrador	3, 6 & 9	Criterion-referenced Tests (CRT)
NFL & Lab. Cont'd	12	Atlantic Provinces Education Foundation (APEF) Chemistry Exam
	4,7,10, & 12	Canadian Test of Basic Skills (CTBS)
Northwest Territories	12	Diploma Exams (Alberta)
	10, 11, & 12 (with knowledge of an Aboriginal language may apply)	Aboriginal Challenge Exam
Yukon	4 - 7	Canadian Test of Basic Skills (CTBS)
	9 & 11	Yukon Territorial Exams
	12	Provincial Exams (BC)
	11 & 12	Language Proficiency Index

Courtesy of the Canadian Teachers Federation

Endnotes

- 1 We have also seen the release of the Ontario First Nation, Métis and Inuit Educational Framework (2007) and the new BC Aboriginal Education Enhancement Agreement (2008).
- 2 The graduate rate was the proportion of grade 12 and 13 students in a band who are included on nominal rolls and graduated in the 1995/1996 school year. The withdrawal rate was measured by those students who were 16 years of age and older on the nominal rolls who withdrew from school.
- 3 For this to be possible the provinces that do not currently have a record of whether a student is Aboriginal would have to collect that information.
- 4 Appendix 4 outlines the province by province breakdown of which grades are subject to standardized testing.
- 5 In the previous section on the Alberta experience with testing, these achievement levels are reported.
- 6 The proportion of students writing annually from 1998/99 to 2000/01 remained fairly constant. Substantial variations exist, however, by grade and type of school. On band schools, the percentage of students writing is about 71, 60, and 40% for grades 3, 6 and 9 respectively. In the non-band schools, the percentage of students writing is 81, 81, and 65% for grades 3, 6 and 9.
- 7 That is, \$15.0 million minus \$1.6 million and \$30.0 million minus \$1.6 million for test writing, leaving residuals of \$13.4 million and \$28.4 million respectively.

References

- Alberta, Province of. 2000. "Aboriginal Policy Statement." Edmonton: Alberta Learning.
- Alberta, Province of. 2003. "Participation and Results for First Nations Students: Grade 3, 6 and 9 Achievement Tests." Edmonton: Learning Assessment Branch.
- American Indian Education Committee. 1994. "American Indian Frameworks Curriculum." St. Paul, MN: Minnesota State Board of Education
- Amrein, A.L. and D.C. Berliner. 2002. "An Analysis of Some Unintended and Negative Consequences of High-Stakes Testing." Michigan: The Great Lakes Center for Education Research & Practice.
- Aphorp, H.S., E. DeBassige D'Amato, and A. Richardson. 2003. *Effective Standards-Based Practices for Native American Students: A Review of the Literature*. Aurora, CO: Mid-continent Research for Education and Learning.
- Armstrong, R., J. Kennedy and P.R. Oberle. 1990. *University Education and Economic Well Being: Indian Achievement and Prospects*. Ottawa: Indian and Northern Affairs Canada, Quantitative Analyses and Socio-Demographic Research, Finance and Professional Services.
- AFN. 2005. *First Nations Education Action Plan*. Ottawa: Assembly of First Nations.
- AFN. 2006. *Securing Our Future: First Nations Agenda for the 2007 Federal Budget. A Submission to the House of Commons Standing Committee on Finance*. Ottawa: Assembly of First Nations.
- Bancroft, B.A. 1989. "Beyond the Single Standardized Test Score as an Indicator of Pupil and School Progress: a Review of Literature in Support of the Development of a Monitoring and Evaluation System that Utilizes Varied Measures to Determine Pupil Progress and Program Performance in BIA School." A paper presented to the National Bureau Effective Schools Team. Okemos, MI.
- Beaulieu, D. 1991. *A Concluding Prospectus on Change and Development for Native Education*. Washington, DC: US Department of Education, Indian Nations at Risk Task Force. ERIC Document Reproduction Service No. ED 343 774.
- Beaulieu, D., L Sparks, and M. Alonzo. 2005. *Preliminary Report on No Child Left Behind in Indian Country*. Washington, DC: National Indian Education Association.
- Beavon, D. and M. Cooke. "An Application of the United Nations Development Index to Registered Indians in Canada." In J. White, P. Maxim and D. Beavon (eds). *Aboriginal Conditions: The Research Foundations of Public Policy*. Vancouver: UBC Press.
- Bell, D., K. Anderson, T. Fortin, J. Ottoman, S. Rose, L. Simard, and K. Spencer. 2004. "Sharing Our Success: Ten Case Studies in Aboriginal Schooling." Kelowna: Society for the Advancement of Excellence in Education.

- Berg, P., and J. Ohler, 1991. *Strategic Plans for use of Modern Technology in the Education of American Indian and Alaska Native Students*. Washington, DC: US Department of Education. ERIC Document Reproduction Service No. ED 343 765.
- Bernardoni, L.C. 1967. "The Testing of Bicultural Children." *Sharing Ideas*. (4): 1–5. ERIC Document Reproduction Service No. ED 077 977.
- Berthelot, J., N. Ross, and S. Tremblay. 2001. "Factors Affecting Grade 3 Student Performance in Ontario: A multilevel analysis." *Education Quarterly Review*. 7(4): 25–36.
- Bishop, J.H. 1995. "The Impact of Curriculum-Based External Examinations on School Priorities and Student Learning." *International Journal of Education Research*. 23(8): 653–752.
- Black, P. and D. William. 1998. "Inside the Black Box: Raising Standards through Classroom Assessment." Phi Delta Kappan. October.
- Black-Branch, J. 1993. "O Canada, Our Home on Native Land: Aboriginal Self-Government, Not the Canadian Charter of Rights and Freedoms, May Be the Key to Educational Reform." *The Canadian Journal of Native Studies*. 13(2): 280–289
- Boloz, S.A. and R. Varrati. 1983. "Apologize or Analyse: Measuring Academic Achievement in the Reservation School." *Journal of American Indian Education*. 23(1): 23–28
- Bordeaux, R. 1995. "Assessment for American Indian and Alaska Native Learners." ERIC Digest. Charleston, WV. ERIC Clearinghouse on Rural Education and Small Schools. ERIC Document Reproduction Service No. ED 385 424.
- Bowker, A. 1992. "The American Indian Female Dropout." *Journal of American Indian Education*. 31(3): 3–20.
- Brandt, E.A. 1992. "The Navajo Area Student Dropout Study: Findings and Implications." *Journal of American Indian Education*. 31(2): 48–63.
- British Columbia Ministry of Education, Aboriginal Education Branch. 2000a. "How are we doing: An Overview of Aboriginal Educational Results 2000–2001." <www.bced.gov.bc.ca/abed/results>.
- British Columbia Ministry of Education, Aboriginal Education Branch. 2000b. "Aboriginal Education Improvement Agreements." <www.bced.gov.bc.ca/abed/agreements/>.
- Browne, D.B. 1984. "WISC-R Scoring Patterns Among Native Americans of the Northern Plains." *White Cloud Journal*. (3): 3–16.
- Buly, M.R. and S.W. Valencia. 2002. "Below the Bar: Profiles of Students who Fail State Reading Assessments." *Educational Evaluation and Policy Analysis*. 24(3): 219–239.
- Bureau of Indian Affairs. 1998. *Report on BIA Education: Excellence in Indian Education through the Effective School Process*. Washington, DC: US Department of the Interior.
- Bureau of Indian Affairs. 2005. "Implementation of the *No Child Left Behind Act* of 2001: Final Rule." *Federal Register*. 70(81): 22178–22222.
- Bureau of Indian Affairs. 2006. *Bureau-Wide Annual Report Card, 2005–2006*. Bureau of Indian Affairs. Office of Indian Education Programs.
- Butterfield, R.A. 1991. "Blueprint for Indian Education: Improving Mainstream Schooling." ERIC Digest. ERIC Clearing House on Rural Education and Small Schools. Charleston, WV. ERIC Document Reproduction Service No. ED 372 898.
- Butterfield, R., and F. Pepper. 1991. "Improving Parental Participation in Elementary and Secondary Education for American Indian and Alaska Native Students." Washington, DC: US Department of Education, Indian Nations at Risk Task Force. ERIC Document Reproduction Service No. Ed 343 763.
- Canada. 1995. *Highlights of Aboriginal Conditions, 1991, 1986: Demographic, Social and Economic Characteristics*. Ottawa: Indian and Northern Affairs Canada.
- Canada, House of Commons Standing Committee on Aboriginal Affairs. 1989. *A Review of the Post-secondary Student Assistance Program of the Department of Indian Affairs and Northern Development*. Ottawa: Queen's Printer.
- Canada, Secretary of State. 1991. *Canada's Off-reserve Aboriginal Population: A Statistical Overview*. Ottawa: Social Trends Analysis Directorate, Department of the Secretary of State.
- Canadian Psychological Association and the Canadian Association of School Psychologists. 2002. "A Joint position statement on the Canadian Press-coverage of Province-Wide Achievement Test Results." <www.cpa.ca/docujents.join_position.html>.

- Canadian Teachers Federation. 2003a. "Assessment and Evaluation: National Testing." <www.ctf-fce.ca/e/assessment/testing-main.htm>.
- Canadian Teachers Federation. 2003b. "Assessment and Evaluation: National Testing." <www.ctf-fce.ca/e/assessment/high-stakes.htm>.
- Cahape, P. 1993. "Blueprints for Indian Education: Research and Development Needs for the 1990's." ERIC Digests. Charleston WV. ERIC Clearinghouse on Rural Education and Small Schools. ERIC Document Reproduction Service No. ED 357 908.
- Cantrall, B., L. Pete, and M. Fields. 1990. "Navajo Culture: A Bridge to the Rest of the World." Paper presented at the Annual Meeting of the American Educational Research Association. Boston, MA: ERIC Document Reproduction Service No. ED 342 163.
- Cawelti, G. 1995. *Handbook of Research on Improving Student Achievement*. Arlington, VA: Educational Research Service.
- Charlie, L. 1997. "Understanding the Rules of Culture to Improve your Classroom Practice." *Snap Shots: A Journal of Classroom Practice*. 6(2). School District 79 (Cowichan Valley).
- Charleston, G., and G. Knight. 1992. "Foreword." In *Indian Nations at Risk: Listening to the People*. P. Cahape and C. Howley (eds.). Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. ERIC Document Reproduction Service No. ED 339 588. 7–12.
- Charleston, G., and G.L. Knight. 1991. "Indian Nations at Risk Task Force: Listen to the People." Washington, DC: US Department of Education, Indian Nations at Risk Task Force. ERIC Document Reproduction Service No. ED 343 763
- Clement, J. (forthcoming in 2009). "The University Attainment of the Registered Indian Population in Canada, 1981–2001: A Cohort Approach." In *Aboriginal Education: Current Crisis and Future Alternatives*. J.P. White, D. Beavon, J. Peters, and N. Spence (eds). Toronto: Thompson Educational Publishing.
- Coggins, K., and N. Radin. 1997. "The Traditional Tribal Values of Ojibwa Parents and the School Performance of their Children: An Exploratory Study." *Journal of American Indian Education*. 36(3): 1–15.
- Coleman, J. 1988. "Social Capital and the Creation of Human Capital." *American Journal of Sociology*. 94(3): S95–S120.
- Coleman, J.S., et al. 1966. *Equality of Educational Opportunity*. Washington, DC: US Government Printing Office.
- Coles, R. 1989. *The Call of Stories: Teaching and the Moral Imagination*. Boston, MA: Houghton-Mifflin.
- Commission on Instructionally Supportive Assessment. 2001. *Building Test to Support Instruction and Accountability: A Guide for Policy Makers*. Washington, DC: National Education Association et al.
- Cotton, K. 1994. "Fostering Intercultural Harmony in Schools: Research Findings." Topical Synthesis. No. 7. Portland, OR: Northwest Regional Educational Laboratory.
- Cummins, J. 2000. *Language, Power and Pedagogy: Bilingual Children in the Crossfire*. Clevedon, UK: Multilingual Matters.
- Cummins, J. 1996. *Negotiating Identities: Education for Empowerment in a Diverse Society*. Ontario, CA: California Association for Bilingual Education.
- Cummins, J. 1997. "Minority Status and Schooling in Canada." *Anthropology and Education Quarterly*. 28(3): 411–430.
- Cummins, J. 1992. "The Empowerment of Indian Students." In *Teaching American Indian Students*. J. Reyhner (ed.). Norman: University of Oklahoma Press. 1–22.
- Cummins, J. 1989. "Empowering Minority Students: A Framework for Intervention." *Harvard Educational Review*. 56(1): 18–36.
- Cummins, J. 1984. *Bilingualism and Special Education: Issues in Assessment and Pedagogy*. San Diego: College Hill.
- Demmert, W.J. Jr. 2001. *Improving Academic Performance Among Native American Students: A Review of the Research Literature*. Charlston, WV: ERIC Clearinghouse on Rural Education and Small Schools.
- Deyhle, D. 1992. "Constructing Failure and Maintaining cultural Identity: Navajo and Ute School Leavers." *Journal of American Indian Education*. 31(2): 24–47.

- Deyhle, D. 1989. "Pushouts and Pullouts: Navajo and Ute School Leavers." *Journal of Navajo Education*. 6(2): 36–51.
- Deyhle, D. 1986. "Success and Failure: a Micro-ethnographic Comparison of Navajo and Anglo Students' Perceptions of Testing." *Curriculum Inquiry*. 16(4): 365–389.
- Deyhle, D. 1983. "Measuring Success and Failure in the Classroom: Teacher Communication about Tests and the Understandings of Young Navajo Students." *Peabody Journal of Education*. 61(1): 67–85.
- Deyle, D., and K. Swisher. 1997. "Research in American Indian and Alaska Native Education: From Assimilation to Self-Determination." In *Review of Research in Education*. Vol. 22. M.W. Apple. (ed). 113–194.
- Drost, H. 1994. "Schooling, Vocational Training and Unemployment: the Case of Canadian Aboriginals." *Canadian Public Policy*. 20(1): 52–65.
- Educational Testing Service (ETS). 1982. "Tests for American Indians." Princeton: ETS. ERIC Document Reproduction Service No. ED 227–995.
- Epstein, J.L. 1988. "How Do We Improve Programs for Parent Involvement?" *Educational Horizons*. (Winter): 58–59.
- Epstein, J.L. 1987. "Parent Involvement: What Research Says to Administrators." *Education and Urban Society*. (February): 119–136.
- Estrin, E.T., and S. Nelson-Barber. 1995. "Bringing Native American Perspectives to Mathematics and Science Teaching." *Theory into Practice*. 34(3): 174–185.
- ERIC. 2001. "Gender Differences in Educational Achievement within Racial and Ethnic Groups." *ERIC Digests 164*. New York: ERIC Clearinghouse on Urban Education. ERIC Document Reproduction Service No. ED 455 341.
- FairTest. 1995. *Implementing Performance Assessments: A Guide to Classroom, School and System Reform*. Cambridge, MA: National Center for Fair and Open Testing.
- FairTest. 1999. "Newsletter Articles of FairTest: the National Center for Fair & Open Testing." *FairTest Examiner*. 13(4): 1–8.
- Fase R. 1989. *Dropout Rates in the US: 1988*. National Centre for Education Statistics US Department of Education, Washington D.C., US Government Printing Office.
- Firestone, W.A., D. Mayrowetz and J. Fairman. 1998. "Performance-Based Assessment and Instructional Change: The Effects of Testing in Maine and Maryland." *Educational Evaluation and Policy Analysis*. 20(2): 95–113.
- Forbes, J.D. 2000. "The New Assimilation Movement: Standards, Tests, and Anglo-American Supremacy." *Journal of American Indian Education*. 39(2): 7–28.
- Fortune, J.C. 1985. *Choctaw Comprehensive School Study*. Philadelphia, MS: Choctaw Heritage Press.
- Fox, S.J. 2000. "Standards-based Reform and American Indian/Alaska Native Education." American Indian/ Alaska Native Research Agenda Conference. Albuquerque, NM.
- Fox, S.J. 2001. "American Indian/Alaska Native Education and Standards-Based Reform." *ERIC Digest*. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. ERIC Document Reproduction Service No. ED 459 039.
- Fox, S. and V. LaFontaine. 1995. "A Whole Language Approach to the [sic] Communication Skills." In *Teaching the Native American*. H. Gilliland. (ed). Dubugue, IA: Kendall/Hunt Publishing.
- Freeman, C. and M. Fox. 2005. *Status and Trends in the Education of American Indians and Alaska Natives. (NCES 2005-108)*. U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Giroux, H.A. 1985. "Critical Pedagogy, Cultural Politics and the Discourse of Experience." *Journal of Education*. 167(2): 22–41.
- Government of Alberta. 2001. *Satisfaction with Learning in Alberta: A Quantitative Report*. Edmonton: Government of Alberta.
- Government of British Columbia. 2000. "Interpreting CTBS Test Results." Victoria: Ministry of Education.
- Government of Manitoba. 2002. "Policies and Procedures for Standardized Testing?" Winnipeg: Manitoba Education, Training and Youth.

- Government of Ontario. 2002. "Ontario Provincial Report on Achievement 2001–2002, English Language Schools." Education Quality and Accountability Office. Toronto: Queens Printer.
- Graysol, D.A., and M.D. Martin. 1990. "Gender/Ethnic Expectations and Student Achievement (GESA)." *Teacher Handbook*. Earlham, IA: Graymill Publications.
- Green, R.L. and R.J. Griffore. 1980. "The Impact of Standardized Testing on Minority Students." *The Journal of Negro Education*. 49(3): 238–252.
- Guerin, G.R., and A.S. Maier. 1983. *Informal Assessment in Education*. Palo Alto, CA: Mayfield Publishing Co.
- Guilmet, G.M. 1983. "The Inappropriateness of Standardized Testing in a Culturally Heterogenous Milieu: A Navajo Example. Los Angeles: University of California. ERIC Document Reproduction Service No. ED 261 830.
- Haney, W. 1991. "We Must Take Care: Fitting Assessment to Functions." In *Expanding Student Assessment*. V. Perrone (ed). Alexandria, VA: Association for Supervision and Curriculum Development. 142–163.
- Harcey, D.W., and B.R. Croone. 1993. *White-Man-Runs-Him*. Evanston, IL: Evanston Publishing Co.
- Hatch, J. 1991. *American Indian and Alaska Native Adult Education and Vocational Training Programs: Historical Beginnings, Present Conditions and Future Directions*. Washington, DC: US Department of Education. ERIC Document Reproduction Service No. ED 343 773.
- Herman, J.L., P.R., Aschbacher, and L. Winters. 1992. *A Practical Guide to Alternative Assessment*. Alexandria, VA: ASCD Publications. ERIC Document Reproduction Service No. ED 352 389.
- Hull, J. 2000. "Aboriginal Post-Secondary Education and Labour Market Outcomes Canada 1996." Ottawa: Department of Indian Affairs and Northern Development.
- Hull, J. 2005. "Post-secondary Education and Labor Market Outcomes: Canada, 2001." Ottawa: Indian and Northern Affairs Canada.
- Hunter, J.E. 1983. "Fairness of the General Aptitude Test Battery: Ability Differences and Their Impact on Minority Hiring Rates." Users Test Research Report No. 46. Sacramento: California State Department of Employment Development. ERIC Document Reproduction Service No. ERIC Document Reproduction Service No. ED 537 534.
- Indian Nations at Risk Task Force. 1991. "Indian Nations at Risk: An Educational Strategy for Action, Final Report." Washington, DC: ERIC Document Reproduction Service No. ED 339–587.
- James, K., E. Chavez, F. Beauvais, R. Edwards, and G. Oetting. 1995. "School Achievement and Drop-out Among Anglo and Indian Females and Males: A Comparative Examination." *American Indian Culture and Research Journal*. 19(3): 24–30.
- Jankowski, W. and B. Moazzami. 1995. "Returns of Education Among Northwestern Ontario's Native People." *Canadian Journal of Native Studies*. 15(1): 104–111.
- Jennings, J. 1998. *Why National Standards and Test? Politics and the Quest for Better Schools*. Thousand Oaks: Sage Publications.
- Jerald, C.D. 2000. "The State of the States." *Education Week*. January 13. 62–65.
- Kaulback, B. 1984. "Styles of Learning Among Native Children: A Review of the Research." *Canadian Journal of Native Education*. 11(3): 27–37.
- Kerman, S., T. Kimball, and M. Martin. 1980. *Teacher Expectations and Student Achievement: Coordinator Manual*. Bloomington, IN: Phi Delta Kappa.
- King, C. 1993. "The State of Aboriginal Education in Southern Canada." Ottawa: RCAP, Public Policy and Aboriginal Peoples 1965–1992.
- Kirkness, V. and S. Selkirk Bowman. 1992. *First Nations and Schools: Triumphs and Struggles*. Toronto: Canadian Education Association.
- Kleinfeld, J., G.W. Mcdiarmid, S. Gurbis, and W. Parrett. 1991. "The Effects of High Stakes Testing on Achievement: Preliminary Findings about Generalization across Tests." Paper Presented at the Annual Meeting of the American Education Research Association. Chicago. April.
- Kober, N.. 2001. *It Takes More Than Testing: Closing the Achievement Gap*. Washington, DC: Center on Education Policy.

- Koretz, D.M., G.F. Madeus, E. Haertel, and A.E. Beaton. 1992. *National Educational Standards and Testing: A Response to the Recommendations of the National Council on Educational Standards and Testing* (Congressional Testimony). Santa Monica, CA: Rand Institute for Education and Training.
- Koretz, D.M., R.L. Linn, S.B. Dunbar, and L.A. Shepard. 1991. "The Effects of High Stakes Testing on Achievement: Preliminary Findings about Generalization Across Tests." Paper Presented at the Annual Meeting of the American Education Research Association. Chicago, IL. April.
- Kunisawa, K. 1988. "A Nation in Crisis: the Dropout Dilemma." *NEA Today*. 6(6): 61–78.
- Ledlow, S. 1992. "Is Cultural Diversity An Adequate Explanation for Dropping Out?" *Journal of American Indian Education*. 31(3): 21–36.
- Leveque, D.M. 1994. "Cultural and Parental Influences on Achievement Among Native American Students in Barstow Unified School District." Paper presented at the National Meeting of the Comparative and International Educational Society, San Diego, California, March, 1994.
- Lofthouse, N. 1999. "Effective schools research British Columbia Ministry of Education. Aboriginal Education Branch." <www.bced.gov.bc.ca/abed/research/esr/>.
- MacKay, R. and L. Myles. 1989. *Native Student Dropouts from Ontario Schools*. Toronto: Ontario Ministry of Education.
- MacPherson, J.C. 1991. *Report on Tradition and Education Towards a Vision of our Future*. September. Ottawa: Indian Affairs and Northern Development.
- Madeus, G., and A.G.A. Tan. 1993. "The Growth of Assessment." In *Challenges and Achievements of American Education*. G. Cawelti (ed). Alexandria: Association for Supervision & Curriculum Development.
- Marker, M. 2000. "Economics and Local Self-determination: Describing the Clash Zone in First Nations Education." *Canadian Journal of Native Education*. 24(1): 30–38.
- Marzano, R.J. 1990. "Standardized Tests: Do they Measure Cognitive Abilities?" *NASSP Bulletin*. No. 74: 93–101.
- Maxim, P., J. White and D. Beavon. 2003. "Dispersion and Polarization of Income among Aboriginal and non-Aboriginal Canadians." In *Aboriginal Conditions: The Research Foundations of Public Policy*. J. White, P.S. Maxim and D. Beavon (eds). Vancouver: UBC Press.
- McBride Management. 2001. *Over-representation of Aboriginal Students Reported with Behaviour Disorders*. Victoria: British Columbia Ministry of Education, Special Programs Branch.
- McDiarmid, G.L. 1972. "The Hazards of Testing Indian Children." Las Cruces, NM: ERIC/CRESS. ERIC Document Reproduction Service No. Ed 055 92
- McDonald, R.J. 1991. "Canada's Off Reserve Aboriginal Population." *Canadian Social Trends*. (Winter): 2–7.
- McShane, D. 1985. "Explaining Achievement patterns of American Indian Children: A Transcultural and Developmental Model." *Peabody Journal of Education*. 61(1): 34–48.
- McShane, D.A., and J.M. Plas. 1982. "Wechsler Scale Performance patterns of American Indian Children." *Psychology in the Schools*. 19(1): 8–17.
- McWhorter, J. 2000. *Losing the Race: Black Americans and Intellectual Self-sabotage*. New York: Free Press.
- Mehrens, W.A., and J. Kaminski. 1989. "Methods for Improving Standardized Test Scores: Fruitful, Fruitless, or Fraudulent?" *Educational Measurement: Issues and Practices*. 8(1): 14–22.
- Ministry of Education 2007. "Ontario First Nation, Métis and Inuit Educational Framework." Toronto: Aboriginal Education Office, Ministry of Education.
- Ministry of Education (B.C.) 2008. *Aboriginal Education Enhancement Agreement*. Victoria: Ministry of Education.
- Mishra, S.P. 1981. "Relationship of WISC-R Factor Scores to Academic Achievement and Classroom Behaviours of Native American Navajos." *Measurement and Evaluation in Guidance*. 14(1): 26–30.
- Natriello, G. and S.M. Dornbusch. 1984. *Teacher Evaluative Standards and Student Effort*. New York: Longman.
- Neil, M. 2003. "High Stakes, High Risk: The Dangerous Consequences of High-Stakes Testing." *American School Board Journal*. 190(2): 18–21.

- Nelson-Barber, S., and E.T. Estrin. 1995. *Culturally Responsive Mathematics and Science Education for Native Students*. San Francisco: The Far West Laboratory for Educational Research and Development.
- Nichols, R. 1991. "Continuous Evaluation of Native Education Programs for American Indian and Alaska Native Students." Washington, DC: US Department of Education, Indian Nations at Risk Task Force. ERIC Document Reproduction Service No. ED 343 760.
- Office of Educational Research and Improvement. 1997a. *Assessment of Student Performance*. Washington, DC: Department of Education.
- Office of Educational Research and Improvement. 1997b. *School Reform and Student Diversity*. Washington, DC: Department of Education.
- Office of Indian Education Programs. 1993. *Annual Report: FY 1992*. Washington, DC: Bureau of Indian Affairs. ERIC Document Reproduction Service No. ED 371 929.
- Ogbu, J.U. 1992. "Understanding Cultural Diversity and Learning." *Educational Researcher*. 21(8): 5–14.
- Olson, J.F. 1997. *The Inclusion of Students with Disabilities and Limited English Proficient Students in Large-scale Assessment: A Summary of Recent Progress*. Washington, DC: National Center for Education Statistics.
- Ontario Elementary Teachers Federation. 2002. "Assessment and Accountability: Why Standardized Testing is the Wrong Answer." <www.etfo.on.ca>.
- ORBIS Associates. 1998. *American Indian Content Standards*. Washington, DC: Bureau of Indian Affairs.
- ORBIS Associates. 1998. "American Indian Standards for Arts Education." Bureau of Indian Affairs. Washington, DC: ERIC Document Reproduction Service No. ED 420–478.
- Paul, A. 1991. "Early Childhood Education in American Indian and Alaska Native Communities." Washington, DC: US Department of Education. ERIC Document Reproduction Service No. ED 343 761.
- Pewewardy, C. 1998. "Our Children Can't Wait: Recapturing the Essence of Indigenous Schools in the United States." *Cultural Survival Quarterly*. 22(1): 29–34.
- PL 103-227 *Goals 2000: Educate America Act*. 1994. Washington, DC: Government Printing Office.
- Popham, W.J. 2001. "The Uses and Misuses of Standardized Tests." *NASSP Bulletin* 2001. 85; 24. DOI: 10.1177/019263650108562204.
- Portes, A and J. Sennsenbrenner. 1993. "Embeddedness and Immigration: Notes on the Social Determinants of Economic Action." *American Journal of Sociology*. 98(6): 1320–1350.
- Preston, V. 1991. "Mathematics and Science Curricula in Elementary and Secondary Education for American Indian and Alaska Native Students." Washington, DC: US Department of Education, Indian Nations at Risk Task Force. ERIC Document Reproduction Service No. ED 343 767.
- Reyhner, J. 2001. "Family, Community, and School Impacts on American Indian and Alaska Native Students' Success." 32nd. Annual National Indian Education Association Annual Convention. <jan.ucc.nau.edu/~jar/AIE/family.html>.
- Reyhner, J. 1991. "Plans for Dropout Prevention and Special School Support Services for American Indian and Alaska Native Students." Washington, DC: US Department of Education. ERIC Document Reproduction Service No. ED 343 732.
- Richardson, C. and N. Blanchet-Cohen. 2000. "Adult Education and Indigenous Peoples in Canada." In *International Survey on Adult Education for Indigenous Peoples. Country Study: Canada*. L. King (ed). Hamburg: UNESCO Institute for Education.
- Sack, W.H., M. Beiser, G. Clarke, and R. Redshirt. 1987. "The High Achieving Sioux Indian Child: Some Preliminary Findings from the Flower of Two Soils Project." *American Indian and Alaska Mental Health Research*. 1(1): 37–51.
- Shepard, L.A. 1989. "Why We Need Better Assessments." *Educational Leadership*. 46(7): 4–9.
- Shields, C.M. 1997. "Learning About Assessment From Native American Schools: Advocacy and Empowerment." *Theory into Practice*. 36(spring): 102–109.
- Shields, C.M. 1996. "Creating a Learning Community in a Multicultural Settings: Issues of Leadership." *The Journal of School Leadership*. 6(1): 47–74.

- Shields, C.M. 1995. "Context, Culture, and Change: Considerations for Pedagogical Change in a Native American Community." *Planning and Changing*. 26(No. ½): 2–24.
- Shields, C.M., and P.A. Seltzer. 1995. "Conflict, Culture, and Difference: Towards a Deeper Understanding of Community." A Paper Presented at the Annual Meeting of the University Grand Council for Educational Administration. Salt Lake City, UT: October.
- Shindell, R. 2001. "What is the Real Purpose of Standardized Testing?" *Teacher Magazine*. 14(1): 9.
- Shutt, D.L. "Family Participation in the Psychological Evaluation of Minority Children." Paper presented to the Southwestern Orthopsychological Association Meeting. Galveston, TX: ERIC Document Reproduction Service No. ED 071 830.
- Siggner, A. 1986. "The Socio-demographic Characteristics of Registered Indians." *Canadian Social Trends* (Winter): 2–9.
- Sleeter, C.E. 1990. "Staff Development for Desegregated Schooling." *Phi Delta Kappan*. 72(1): 133–140.
- Snipp, C. 1990. *American Indians: The First of this Land*. New York: Russel Sage Foundation.
- Snipp, C and G. Sandefur. 1988. "Earnings of American Indians and Alaskan Natives: the Effects of Residence and Migration." *Social Forces*. 66(4): 994–1008.
- Spence, N., J. White and P. Maxim. (Forthcoming). "Modeling Educational Success of First Nations Students in Canada: Community Level Perspectives."
- Sperling, D.H. 1994. *Tiospa Zina Tribal School—Student Handbook*. Agency Village, SD: Sisseton Wahpeton School Board.
- Sperling, D.H. 1994. "Assessment and Reporting: A Natural Pair." *Educational Leadership*. 52(2): 10–13.
- Tait, H. 1999. "Educational Achievement of Young Aboriginal Adults." *Canadian Social Trends*. 52 (Spring): 6–10.
- Tonemah, S. 1991. "Gifted and Talented American Indian and Alaska Native Students." Washington, DC: US Department of Education. ERIC Document Reproduction Service No. ED 343 769.
- Toohy, K. 1980–81. "English as a Second Language for Native Canadians." *Canadian Journal of Education*. 10(3): 275–293.
- Turcotte, M. and J. Zhao. 2004. "Well-being of Off-reserve Aboriginal Children." *Canadian Social Trends*. 75(Winter): 22–27.
- Ungerleider, C. 2006. "Reflections on the Use of Large-Scale Student Assessment for Improving Student Success." *Canadian Journal of Education*. 29(3): 873–883.
- Upshur, J.A. and J. Fata (eds). 1967. "Problems in Foreign Language Testing: Proceedings of a Conference Held at the University of Michigan." Ann Arbor, MI: University of Michigan Research Club in Language Learning. ERIC Document Reproduction Service No. ED 022 162.
- Urion, C. 1993. "First Nations Schooling in Canada: A Review of Changing Issues." In *Contemporary Educational Issues, 2nd ed.* L.L. Stewin and S.J.H. McCann (eds). Toronto: Copp Clark Pitman Ltd.
- Villegas, A.M. 1991. "Culturally Responsive Pedagogy for the 1990's and Beyond." Trends and Issues paper No. 6. Washington, DC: ERIC Clearinghouse on Teacher Education. ERIC Document Reproduction Service No. ED 339 698.
- Volante, L. 2004. "Teaching To the Test: What Every Educator and Policy-maker Should Know." *Canadian Journal of Educational Administration and Policy*. Issue 35.
- Wagstaff, L., and L. Fusarelli. 1995. "The Racial Minority Paradox: New Leadership for Learning in Communities of Diversity." Paper presented at the Annual Meeting of the University of Council for Educational Administration, Salt Lake City, UT.
- Wang, M.C., G.D. Haertel and H.J. Walberg. 1998. *Educational Resilience*. Philadelphia: Temple University Centre for Research in Human Development and Education, Laboratory for Student Success. 98(11).
- Wang, M.C., G.D. Haertel and H.J. Walberg. 1997. "Fostering Educational Resilience in Inner-city Schools." Philadelphia: Temple University Centre for Research in Human Development and Education, Laboratory for Student Success. 97(4). <www.temple.edu/lss/htmlpublications/publications/pubs97-4.htm>.

- Wang, M.C., G.D. Haertel and H.J. Walberg. 1997. "Revitalizing Inner Cities: Focussing on Children's Learning." Philadelphia: Temple University Centre for Research in Human Development and Education. Laboratory for Student Success. 97(7).
- Ward, C. 1995. "American Indian High School Completion in Rural Southeastern Montana." *Rural Sociology*. 60(3): 416–434.
- Ward, C. 1998. "Community Resources and School Performance: the Northern Cheyenne Case." *Sociological Inquiry*. 68(1): 83–113.
- Warner, L.S. and J. Hastings. 1995. "A Research Study to Determine Perceptions of Job-Related Stress by Bureau of Indian Affairs Education Employees." *Journal of American Indian Education*. 35(1): 16–29.
- Webb, M. 1990. "Multicultural Education in Elementary and Secondary Schools." ERIC Digest. No. 67. New York: ERIC Clearinghouse on Urban Education. ERIC Document Reproduction Service No. ED 327 613.
- White, J. 2002. "Aboriginal Women and the Economy" 2002 Aboriginal Policy Research Conference, Ottawa, Nov. 26–28.
- White, J., D. Beavon and Paul Maxim. 2003. *Aboriginal Conditions: The Research Foundations of Public Policy*. Vancouver: UBC Press.
- White, J. and P. Maxim. 2002. "Correlates of Educational Attainment in First Nations Communities." 2002 Aboriginal Policy Research Conference, Ottawa, Nov. 26–28.
- White, J., P. Maxim and N. Spence. 2004. "An Examination of Educational Success." In *Aboriginal Policy Research: Setting the Agenda for Change, Volume 1*. J. White, P. Maxim and D Beavon (eds). Toronto: Thompson Educational Publishing. 128–148.
- White House Conference on Indian Education. 1992. *White House Conference on Indian Education: Final Report—Executive Summary*. Washington, DC: White House.
- Wilkinson, R.G. 1997. "Comment: Income, Inequality and Social Cohesion." *American Journal of Public Health*. 87(9): 1504–1506.
- Willeto, A.A. 1999. "Navajo Culture and Family Influences on Academic Success: Traditionalism is not a Significant predictor of Achievement Among Young Navajos." *Journal of American Indian Education*. 38(2): 1–21.
- Williams, B, and K. Gross. 1990. "English Proficiency Test and Classroom Application." Paper Presented at the 16th Annual Alaska Bilingual Multicultural Education Conference. Anchorage, AK. ERIC Document Reproduction Service No. ED 324 156. February.
- Wilson, K. and M. Rosenberg. 2002. "Exploring the Determinants of Health for First Nations Peoples in Canada: Can Existing Frameworks Accommodate Traditional Activities?" *Social Science and Medicine*. 55(11): 2017–2031.
- Work in Progress. 1994. "Content Standards and Assessment." A Paper Offered to Goals 2000 Participants. Washington, DC: US Department of Education. May.
- Worthen, B.R. 1993. "Critical Issues that will Determine the Future of Alternative Assessment." *Phi Delta Kappan*. 74(6): 444–454.
- Wright, B. 1991. "American Indian and Alaska Native Higher Education: Toward a New Century of Academic Achievement and Cultural Integrity." Washington, DC: US Department of Education. ERIC Document Reproduction Service No. ED 343 771.
- Wright, W.E. 2002. "The Effects of High Stakes Testing in an Inner-City Elementary School: The Curriculum, the Teachers, and the English Language Learners." *Current Issues in Education*. 5(5). Available at: <cie.ed.asu.edu/volume5/number5/>.
- Zessoules, R., and H. Gardner. 1991. "Authentic Assessment: Beyond the Buzzword and into the Classroom." In *Expanding Student Assessment*. V. Perrone (ed). Alexandria, VA: Association for Supervision and Curriculum Development. 47–71.