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The Education Papers

Aboriginal Off-Reserve Education

Time for Action

John Richards and
Aidan Vining

In this issue...
More than any other factor, poor education levels are condemning many Aboriginals to live in poverty. This study assesses the education performance of Aboriginal students in individual off-reserve British Columbia schools. Overall, less than half of Aboriginal students entering grade eight in 1996 achieved a B.C. high school graduation certificate within six years. The study recommends a combination of remedial strategies.

The Study in Brief

Community prosperity requires that a majority of the adult population have jobs that generate reasonable earnings. Jobs with reasonable earnings are impossible without adequate educational levels. More than any other factor, poor education levels are condemning many Aboriginals to live in poverty.

The links among income, employment and education levels exist for Aboriginals, as much as for other Canadians. Among Aboriginals in their prime income-earning years, the employment rate ranges from below 45 percent for those living on-reserve in the three Prairie provinces to above 70 percent for off-reserve Aboriginals in Alberta and Ontario.

Jobs matter, but to get a good job, education matters more now than in generations past. If, as its first Throne Speech promises, the Paul Martin government is to bring more coherence to Aboriginal policy, improved Aboriginal education results must be a higher priority than in recent years. This raises a constitutional matter. Two thirds of Aboriginals now live off-reserve. Off-reserve education is unambiguously under provincial jurisdiction. Bringing coherence to Aboriginal education policy will require engagement by the provinces.

This *Commentary* assesses in detail the education performance of Aboriginal students in individual off-reserve British Columbia schools. Overall, less than half of Aboriginal students entering grade eight in 1996 achieved a high school graduation certificate within six years. While this is an unacceptably high dropout rate, Aboriginal education levels in B.C. are superior to those in most other provinces.

As an agenda for addressing Aboriginal education, the authors recommend a combination of strategies: enhanced student mobility, creation of magnet schools, and school enrichment.

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In industrialized societies, community prosperity requires that a majority of the adult population have jobs that generate reasonable earnings. Jobs with reasonable earnings are impossible without adequate educational levels. Across Canada generally, education levels of Aboriginals are not reasonable, condemning many to live in poverty.

The first task we undertake in this *Commentary* is to demonstrate that the links among income, employment and education levels exist for Aboriginals, as much as for other Canadians. We then proceed to examine in some detail Aboriginal school performance in British Columbia, the one province where available data make an exploration of this link feasible. While our overt focus is on quality, as measured by primary and secondary school Aboriginal test scores, there is an obvious feedback from higher Aboriginal test scores to higher Aboriginal education levels. Those students who perform poorly tend to drop out, and depress overall education levels. In the final section, we generalize from these results, and from the work of others, and assess options for reorganizing off-reserve Aboriginal education in cities.

Income, Employment, and Education Levels

Figure 1 uses data from the 2001 Census to illustrate the relationship between employment and median incomes among selected groups of Canadians between the ages of 25 and 44 — those in their prime earning years.[1] Members of this cohort are old enough to have completed most of their education and training, yet are young enough to have benefited from the added emphasis on formal education over the last four decades. The oldest members of this cohort entered school in the early 1960s, the youngest in the early 1980s. The cohort is divided three ways: into six provincial groupings (these are the six provinces having substantial Aboriginal populations); into either Aboriginal or non-Aboriginal groups; and by residence, either on- or off-reserve, for the Aboriginal population. This division creates three categories per province, 18 groups in all.

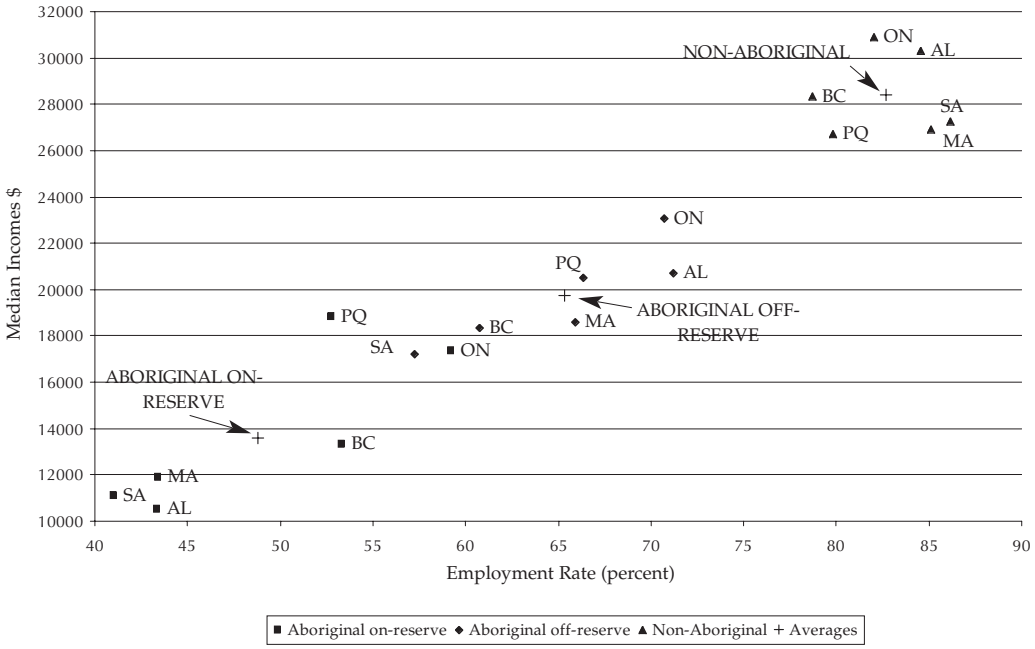
The positive link between employment rate and median income is dramatic. It exists within each category, as well as across them. The poorest groups are on-reserve Aboriginals in Manitoba, Saskatchewan and Alberta. Here, median incomes are below $12,000 and employment rates are below 45 percent. Off-reserve Aboriginals enjoy incomes that are between on-reserve median incomes and those of non-Aboriginals. Relative to on-reserve Aboriginals in the Prairies, the average employment rate among non-Aboriginals is double, and average median incomes are two-and-a-half times higher.

In allowing individuals to escape poverty, jobs matter. But to get a good job, education matters more now than in generations past. A century ago, regardless of

We thank Linda Wong for assistance in assembling data, and David Weimer for statistical advice. Barry Anderson, Yvan Guillemette, Mark Holmes, David Johnson, Helen Raptis, and Bill Robson provided comments on earlier drafts. As usual, responsibility for errors lies with the authors.

1 These data are derived from the 2001 Aboriginal Peoples Survey (Canada 2003), part of the 2001 Census. For discussion of the meaning and limitations of the census income concept in the context of Aboriginal surveys, see Drost and Richards (2003).

Figure 1: *Median Incomes, 2000, Aboriginal Identify On- and Off-Reserve and Non-Aboriginal, Ages 25-44, Selected Provinces, by Employment Rate*



formal education, many earned good wages in Canada's forests, factories and mines. Such jobs made up a large fraction of the Canadian labour force. In the 21st century, there are proportionately many fewer of these jobs. Aggravating the situation, wage dispersion has risen over the last half century (OECD 1996). Recent Canadian evidence suggests that the dispersion of permanent earnings of workers widened in the 1990s (Beach, Finnie and Gray 2003). Anyone now entering the labour force with limited formal education has few good job opportunities. And the earnings from these jobs will probably be further below average earnings than in decades past. To put this more formally, returns to investment in education rose over the 20th century, particularly over the second half.[2]

The educational premium applies to Aboriginals, as much as it does to others in the labour force.[3] Using the 1996 Census, Figure 2 summarizes 1995 median incomes for Aboriginals and non-Aboriginals across Canada by educational levels.[4] Again, the Aboriginal population is divided into those living on- and off-reserve. As the education level of Aboriginals rises, so do their median incomes.

Figure 3 shows the relationship between education and income in another way. At each education level, the non-Aboriginal median income is set to 100, and

2 The following articles assess the return to investment in education: Katz and Murphy (1992), Juhn et al. (1993), Buchinsky (1994), Bratsberg and Terrell (2002).

3 Antecol and Bedard (2002), Bradbury (2002), Drolet (2002), Pendakur and Pendakur (2002) consider education achievement and income distributions among ethnic groups.

4 The 1995 income statistics are calculated from data drawn from a special run on the master file of the 1996 Canadian Census. Analogous data from the 2001 Census are not yet available. The data summarized in Figures 2 and 3 refer to people 15 years and older who are not currently in school. See Drost and Richards (2003).

Figure 2: *Median Incomes, by Education Level, 1995*

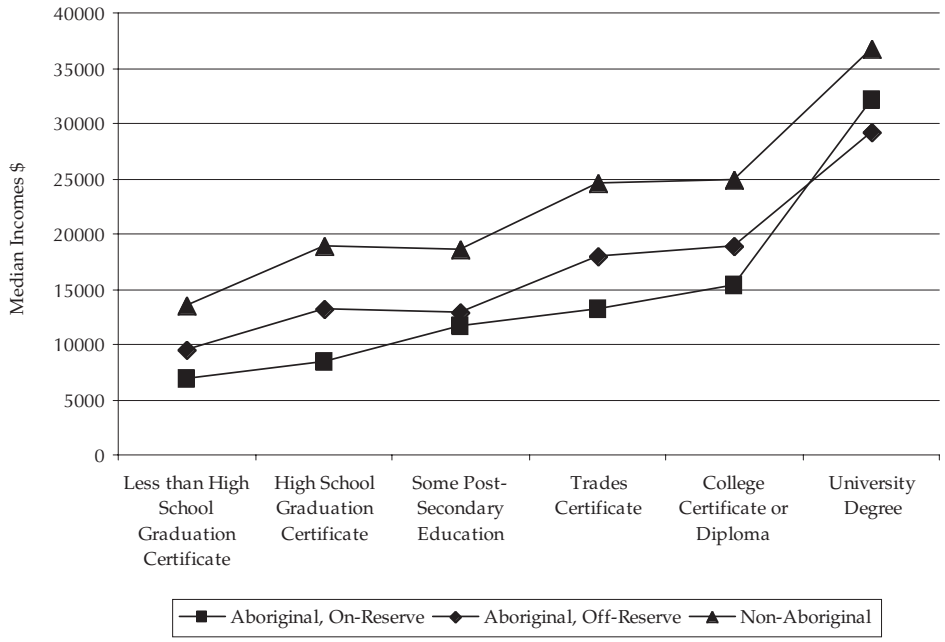
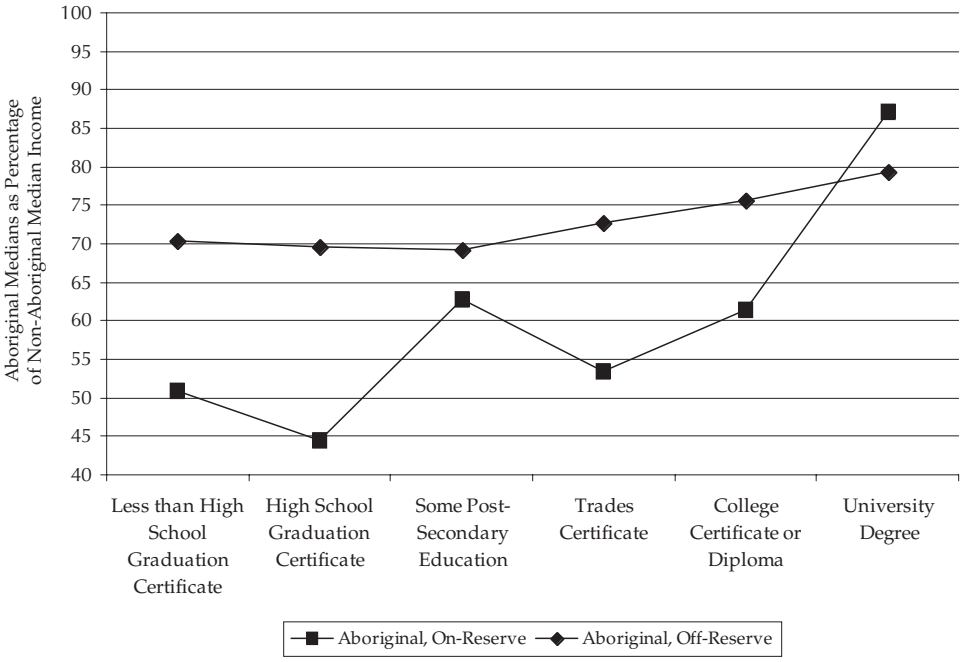


Figure 3: *Aboriginal Median Incomes by Education Level, 1995 (normalized, Non-Aboriginal Median = 100 at each education level)*



Aboriginal median incomes are adjusted accordingly. This illustrates the gap between Aboriginal and non-Aboriginal incomes at each education level. Of course, this gap reflects many factors, in addition to educational levels. To the extent that racial discrimination underlies it, it is encouraging to see the gap decline at higher Aboriginal education levels. The gap also reflects the characteristics of workers. For example, workers with less experience earn less. At all education levels, Aboriginals are on average younger than non-Aboriginals, and have less experience.

Among off-reserve Aboriginals and non-Aboriginals — less so among on-reserve Aboriginals — there are effectively three educational steps in Figure 2. The first step-up in terms of increased incomes takes place with completion of high school. A high school graduation certificate is now the minimum qualification for many entry-level jobs. Those aspiring to reasonably well-paying jobs must reach at least the second step, completion of a trade certificate. The third step is completion of a university degree.

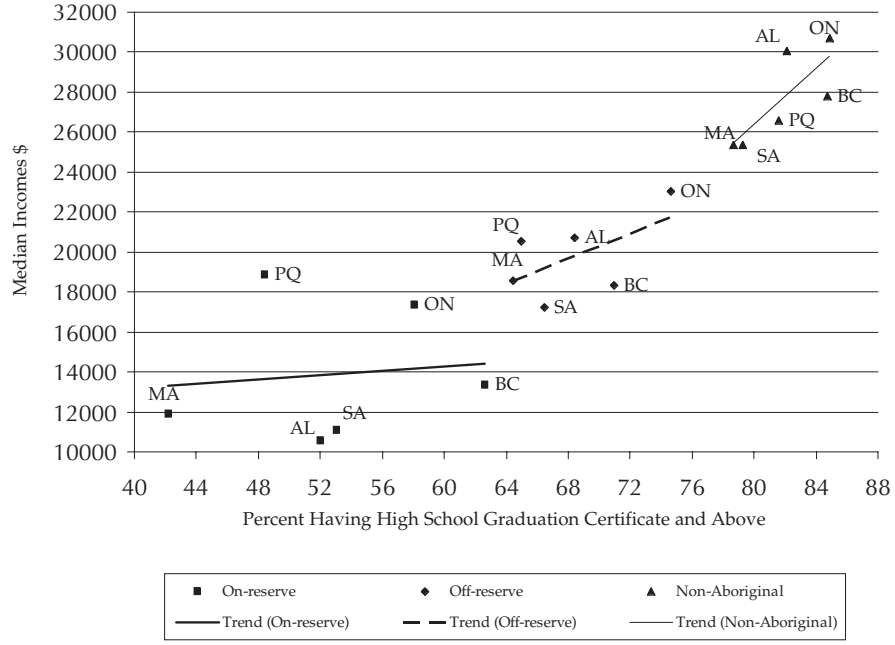
A breakdown of income by education level from the 2001 Census is not yet available, but we can still draw some conclusions on the link. Across the 18 defined groups, there is a strong positive overall correlation between the percent that graduate from high school and their employment rate. There is a similar positive correlation with respect to the percent that reach the second step of trade certification.[5] Given this positive correlation, the conclusion that can be drawn from Figure 4 is not surprising: Education level (as measured by the percent of each group that have a high school graduation certificate or higher) is positively correlated with median income.

The explanation for the education-income link is probably twofold. First, as education levels rise in any group, those working realize on average higher incomes. Second, a higher education level increases the employment rate, which also raises the group median income. The higher income jobs available to those achieving higher education levels increase the probable reward from work relative to the income available from non-work options, such as social assistance. As Figure 4 illustrates, while the link is weaker among on-reserve Aboriginals, the positive education-to-income link exists within each category: for Aboriginals on- and off-reserve and for non-Aboriginals. While, the positive link is low among on-reserve Aboriginals.

Several years ago, the Auditor General documented the glacial rate of improvement of on-reserve education outcomes. The report admonished the federal Department of Indian Affairs on "the need to articulate its role in education, to develop and use appropriate performance measures and to improve operational performance" (Canada 2000, 4-5). This admonition is still relevant. The Auditor General's comments apply with equal force to provincially provided

5 Across all 18 groups, the correlation between employment rate and high school completion rate is 0.92. Across the six on-reserve groups, the correlation is 0.54 and across the six off-reserve groups, it is 0.29. The correlation coefficients between employment rate and trades certificate completion rate are slightly higher: The overall rate is 0.94; across the six on-reserve groups, it is 0.72 and across the off-reserve groups it is 0.36. For non-Aboriginal groups, both correlation rates are negative. (These latter results are not particularly meaningful because of the narrow ranges across provinces among the non-Aboriginal groups.)

Figure 4: *Median Incomes, 2000; Aboriginal-Identify On- and Off-Reserve and Non-Aboriginal, Ages 25-44, Selected Provinces, by Percent Having High School Graduation Certificate and Above*



education for Aboriginals. According to the 2001 Census, only 31 percent of all Canadian Aboriginals now live on-reserve (down from 33 percent in 1996); 20 percent live in rural off-reserve areas (unchanged from 1996), and 49 percent live in urban areas (up from 47 percent in 1996). Among the Aboriginal population that identify as Indian — as opposed to Métis or Inuit — over half now live off-reserve, and almost a quarter live in urban areas (Canada 2003).[6] Many on-reserve Indian children attend nearby off-reserve schools under provincial jurisdiction. Although there are honourable exceptions — some of which we later discuss — local school boards and provincial education ministries have treated Aboriginal schooling outcomes as a low priority. With the exception of British Columbia, they are not adequately documenting the extent of the problem.

In assessing the income-employment-education links, we have summarized education attainment primarily by the percentage having graduated from high school. It is worth looking more comprehensively at the education levels among on- and off-reserve Aboriginals and comparing them with those of non-Aboriginals. The nation-wide education profiles in Figure 5 are derived from the 2001 Aboriginal Peoples Survey (Canada 2003). Among the Aboriginal Canadian population 15 years and older living on-reserve, 41.4 percent have a high school graduation certificate and above; 34.5 percent possess a high school certificate, as well as some postsecondary education, and 23.8 percent possess a trade certificate

6 The census definition of "Aboriginal" has varied through the decades. Currently, the definition based on the criterion of identity is most common. Unless specified otherwise, the data on Aboriginals used in this study rely on the self-identity criterion. Another categorization is that of Indians registered under the Indian Act. They have the right to live on-reserve. In general, other Aboriginals do not. The overlap between those who are registered Indians and Indian-identity Aboriginals in the census is high.

Figure 5a: *Education Profiles, Aboriginal On- and Off-Reserve and Non-Aboriginal, Canada, 2001, Age 15 and Older*

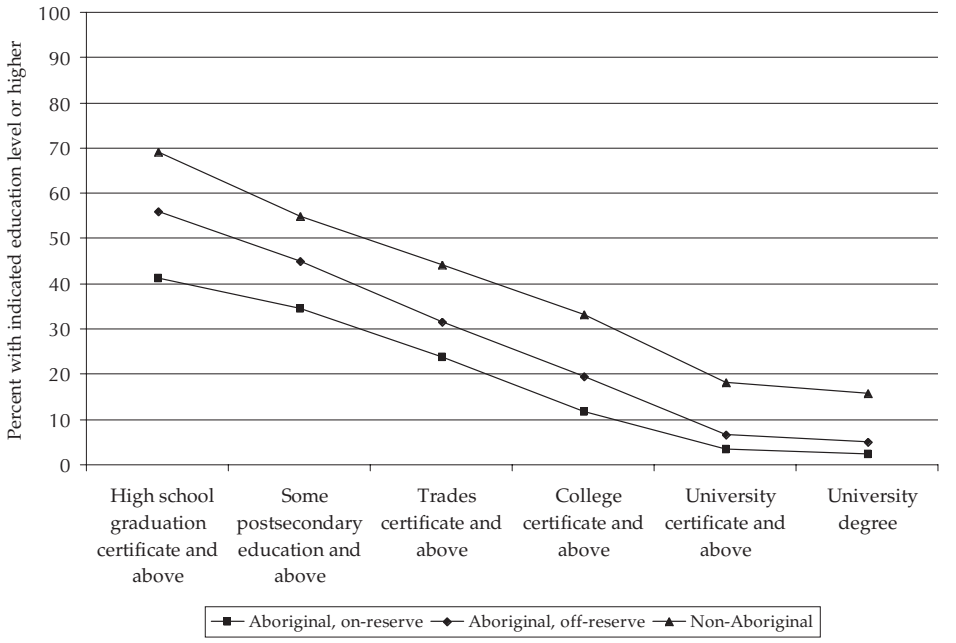
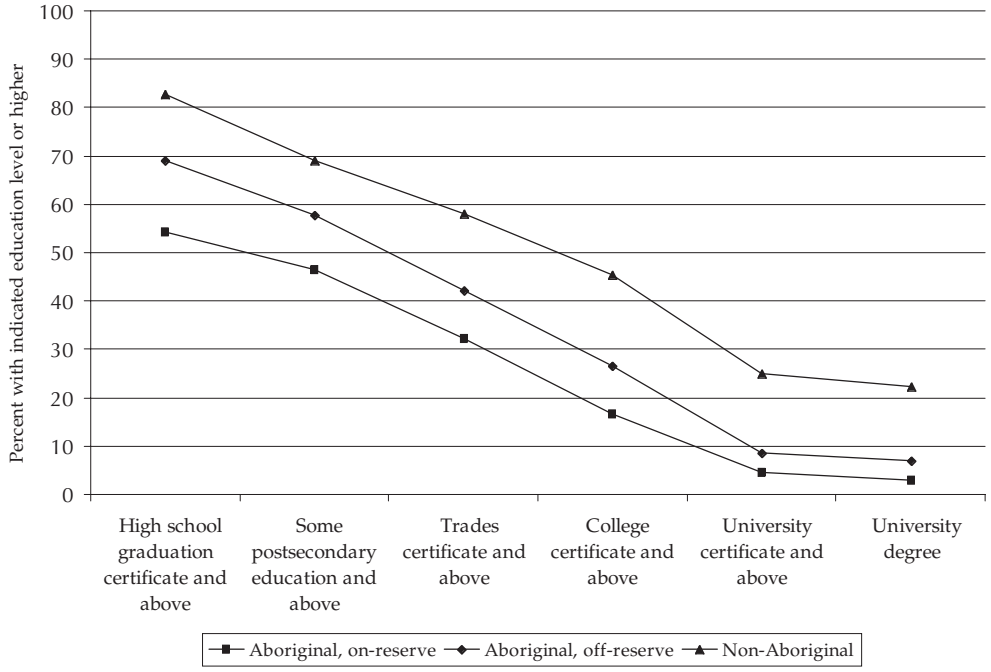


Figure 5b: *Education Profiles, Aboriginal On- and Off-Reserve and Non-Aboriginal, Canada 2001, Age 25-44*



and above. The final education level in Figure 5a is a university degree, an education level realized by 2.3 percent of the on-reserve Aboriginal population. Figure 5a also illustrates the comparable profiles for 15-year and older off-reserve Aboriginals and for non-Aboriginals.

Figure 5b focuses only on the 25-to-44 age cohort, the age groups analyzed above. The first observation is that educational attainment is higher than among the larger cohort, including all adults over age 15. That is the good news. The not-so-good news is that the Aboriginal and non-Aboriginal educational profiles do not appear to be converging. For example, among non-Aboriginal Canadians 15 and older, 69.2 percent have graduated from high school. Among the analogous Aboriginal-identity population (both on- and off-reserve), 52.0 percent graduated from high school, for a gap of 17.2 percentage points. Among those aged 25-to-44, the gap is 17.9 percentage points (82.9 percent for non-Aboriginals less 65.0 percent for Aboriginals).

Registered Indians have a choice that other Aboriginals do not: to live either on- or off-reserve. If they choose to live on-reserve, they can obviously participate more readily in the cultural life of their tribe. Furthermore, because of the shortage of well-paying local jobs on or near most reserves, formal education is of less importance in terms of income generation than for their off-reserve relatives. This self-selection dynamic probably contributes to the weak link between education level and median income among on-reserve Aboriginal groups (Figure 4).

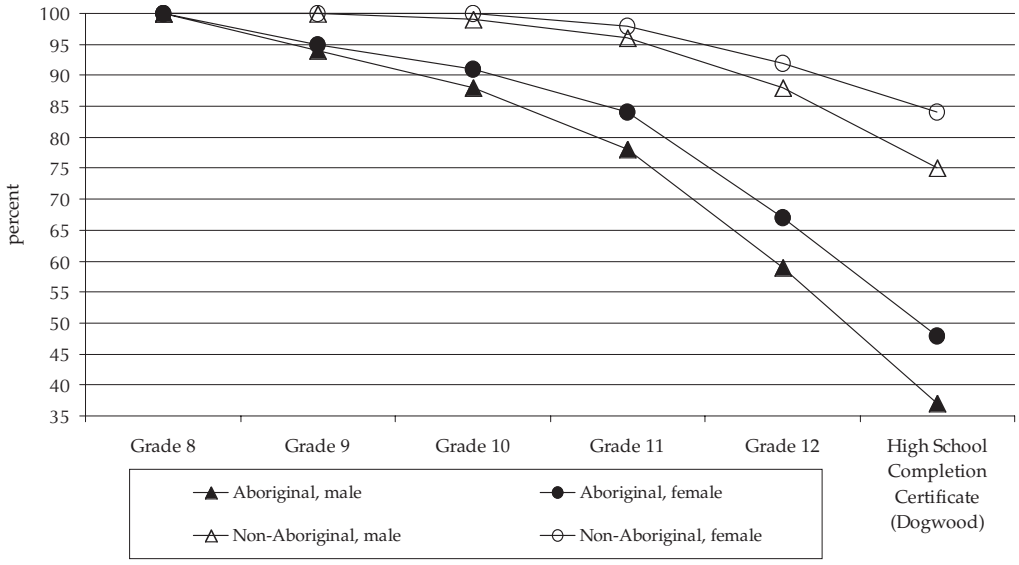
Currently, the price to live on-reserve is lower incomes and education prospects for children. The median on-reserve income among Indian-identity Aboriginals in the 25-to-44 year old cohort for 2000 was $13,700. The comparable statistic for off-reserve Indians is $18,000, a third higher. The youngest cohort for which we have Census education data is made up of those 15-to-24. This group tells us something about education prospects for the next generation, although the evidence is obviously incomplete. Many are still in school. In terms of high school graduation within this age cohort, the gap between on- and off-reserve Indians is 13.1 percentage points (37.4 percent for off-reserve less 24.0 percent for on-reserve Indians) (Canada 2003).

Even if many adult Indians choose to live on-reserve and forgo more remunerative employment elsewhere, education levels remain an important determinant of whether children can realistically choose, when the time comes, between an on- or off-reserve lifestyle. The minimum education prerequisite to render off-reserve income prospects reasonable is high school graduation.

If, as its first Throne Speech promises, the Paul Martin government is to bring more coherence to Aboriginal policy, improved Aboriginal education must be a higher priority than in recent years. This raises a constitutional matter. Off-reserve, education is unambiguously under provincial jurisdiction. Bringing coherence to Aboriginal policy also requires engagement by the provinces.

Without violating provincial jurisdiction, Ottawa can be effective in advancing Aboriginal education. The Prime Minister can use the bully pulpit of first ministers' meetings to advance the education issue and persuade his provincial colleagues to commit themselves to more ambitious Aboriginal education targets. Over the last several years, Ottawa has maintained a modest Urban Aboriginal Strategy. Its role can be expanded to finance more pilot projects in off-reserve education.

Figure 6: *Student Retention and Graduation Rates, Cohort Entering Grade 8 in 1996, British Columbia Provincial Schools*



To appreciate the state of off-reserve Aboriginal education and potential strategies to improve outcomes, we turn now to the case of British Columbia.

Aboriginal Students in British Columbia's Off-Reserve Schools

In the 2002/2003 school year, 49,000 students within the British Columbia school system self-identified as Aboriginals. They made up 8.2 percent of the total student count, up from 5.9 percent in 1995/1996. Three quarters of these Aboriginal students lived off-reserve; the remainder were registered Indians living on-reserve but attending off-reserve schools in the provincial system. Although on-reserve numbers have remained fairly stable, the off-reserve numbers have grown rapidly — a 57-percent increase over the preceding seven years.[7]

Figure 6 illustrates summary statistics on the retention and graduation rate among the cohort of Aboriginal and non-Aboriginal students entering grade eight in 1996 in British Columbia provincial schools.[8] Some among this cohort left the province and others will obtain their high school graduation certificate at a later date. These adjustments apply disproportionately to the Aboriginal students.

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7 Aboriginal student statistics cited in this paragraph are derived from reports of the Aboriginal Education branch of the B.C. Ministry of Education (British Columbia 2002, 26; 2003, 26). The count excludes those Indian students attending on-reserve schools.

8 Among Aboriginal students in the cohort that entered grade eight in 1996, 42.5 percent graduated from high school within six years. The comparable statistic for non-Aboriginal students was 79.2 percent. While Aboriginal completion rates are very low, there has been improvement in recent years. Relative to the cohorts entering grade eight five years earlier, this Aboriginal completion rate has risen by 8.7 percentage points, the non-Aboriginal rate by 6.4 points (British Columbia 2003, 26).

Nonetheless, they are minor (Cowley and Easton 2004, 13). They do not affect the conclusion that dropout rates for Aboriginal students are unacceptably high. Those who drop out may — but probably will not — reconnect with the school system.

Quality of schooling, usually measured by comparative results of standardized tests scores, matters, as well as the levels of completion. The importance of measuring school quality, and of providing incentives to schools to perform better, is a recurring theme in contemporary education policy analysis.[9] Over the last decade, many provinces followed an international pattern, establishing tests intended to measure performance in core subjects at various stages of students' careers (Bishop 1997). British Columbia is unique because it is the only province, to date, to organize the tests in a manner that provides evidence on the relative performance of Aboriginal students in the provincial school system.

Since 1999, the provincial education ministry has organized annual province-wide tests in writing, reading, and numeracy in grades four, seven, and 10. With some exceptions, all provincial students in those grades take the relevant Foundation Skills Assessment (FSA) tests. They receive one of three scores: "not meeting expectations"; "meeting expectations," or "exceeding expectations." To preserve confidentiality, results are not publicly available by student, but they are available by school. Results within each school are available by a number of student characteristics, including whether they identify as being Aboriginal (see Appendix 1 for further details).

Table 1 provides the 2000/2001 distributions of individual student test scores, by grade and exam component, for both Aboriginal and non-Aboriginal students. The most frequently used statistic from these tests is the percent of student scores that meet or exceed expectations, relative to the total. This we designate as the meet/exceed statistic. Averaging over all grades and components, the Aboriginal meet/exceed statistic is 60.1 percent, which is 21.7 percentage points lower than the comparable non-Aboriginal meet/exceed statistic of 81.8 percent. The share of Aboriginal students not meeting expectations is 39.9 percent, more than twice the comparable non-Aboriginal statistic of 18.2 percent. Proportionately, the largest difference occurs with the exceeds-expectations scores. The average for Aboriginal students is 1.7 percent, less than a quarter the 7.0 percent average for non-Aboriginal students.

One caveat to keep in mind in interpreting these results is the difference in dropout rates between non-Aboriginals and Aboriginals. The higher Aboriginal dropout rate means that the FSA Aboriginal scores are excluding a larger fraction of the Aboriginal population than of the non-Aboriginal population, particularly at grade 10.[10]

For the 2000/2001 school year, 149 British Columbia schools reported at least some results for both Aboriginal and non-Aboriginal students. The Aboriginal share of student scores within each of these schools varies widely (Table 2, column

9 Hanushek (2002) offers an excellent survey of empirical studies of which policies do and do not succeed in improving school performance.

10 Of all students who entered grade eight in 1996, the Aboriginal retention rate was, by grade 10, about 10 percentage points below that for non-Aboriginals (British Columbia 2003, 26).

Table 1: *Distributions of Aboriginal and Non-Aboriginal 2000-2001 FSA Scores*

		Aboriginal students				Non-Aboriginal students			
Grade	Component	Not Yet Within expectations	Meets expectations	Exceeds expectations	Total	Not Yet Within expectations	Meets expectations	Exceeds expectations	Total
				(percent)					
4	numeracy	43.3	54.8	2.0	100.0	19.4	74.4	6.1	100.0
4	reading	33.4	64.2	2.4	100.0	17.2	75.3	7.6	100.0
4	writing	46.9	52.0	1.1	100.0	19.0	74.8	6.2	100.0
7	numeracy	37.1	60.8	2.1	100.0	17.6	75.2	7.2	100.0
7	reading	35.8	62.4	1.8	100.0	19.3	73.8	6.9	100.0
7	writing	43.2	55.2	1.6	100.0	17.3	74.3	8.5	100.0
10	numeracy	33.8	65.8	0.4	100.0	18.9	75.1	6.0	100.0
10	reading	43.2	55.7	1.1	100.0	17.5	75.6	6.9	100.0
10	writing	40.6	57.8	1.6	100.0	18.1	75.7	6.2	100.0
Provincial average (all grades, all components)		39.9	58.4	1.7	100.0	18.2	74.8	7.0	100.0

Table 2: *Selected Characteristics of Mixed Schools*[a]

	Meet/exceed score, by school for ...			
	Aboriginal students 1	Non-Aboriginal students 2	Difference (2. - 1.) 3	Aboriginal student scores as share of all scores 4
	(percent)	*(percent)*	*(percentage points)*	*(percent)*
10 percentile (bottom decile)	39.1	65.2	26.1	3.4
25 percentile (bottom quartile)	51.6	71.2	19.6	4.9
50 percentile (median)	61.5	76.5	15.0	8.3
75 percentile (top quartile)	73.3	81.4	8.1	15.5
90 percentile (top decile)	83.3	86.4	3.0	26.7

Note: [a] Mixed schools refer to the 149 British Columbia schools reporting both aboriginal and nonaboriginal student scores. School rankings are not the same across characteristics

4). Within each of these 149 mixed schools we calculate the average meet/exceed FSA score for both Aboriginal and non-Aboriginal students. For our purpose, we construct this statistic by averaging within the school over all grades and all test components. Summary statistics for these distributions can be found in Table 2. Among these 149 schools, the median meet/exceed score for non-Aboriginal students is, for example, 76.5 percent. The median school meet/exceed score for Aboriginal students is 61.5 percent.

Column 3 of the table illustrates that school meet/exceed scores are much more widely dispersed for Aboriginals than for non-Aboriginals. There is little difference among the top schools in terms of the performance of Aboriginal and non-Aboriginal students. (Realize that school rankings in terms of Aboriginal and non-Aboriginal meet/exceed scores differ.) The 90th percentile is indicative of results at top-performing schools. Here, the difference between Aboriginal and non-Aboriginal school meet/exceed scores is only 3 percentage points. As one moves down the respective distributions to those schools that perform less well, the gap widens. At the median, it is 15.0 percentage points. At the 10th percentile, it widens to 26.1 points.

Clearly, some schools do well by their Aboriginal students, as measured by school average FSA scores. If we define doing well in relative terms, to mean an average school meet/exceed score above the non-Aboriginal median (which is 76.5 percent), one half of all mixed schools are, by definition, doing well by their non-Aboriginal students. If we turn to Aboriginal scores, there are 27 schools among these 149 in which the Aboriginal meet/exceed score is above 76.5 percent. Hence, in terms of exceeding the non-Aboriginal median, about one British Columbia school in five is doing well by its Aboriginal students. To review the Aboriginal education performance of individual schools, see the recently published *Report Card*, written by Peter Cowley and Steve Easton (2004). It provides a great deal of useful information beyond the FSA results. The authors construct six measures per school: average marks among Aboriginal students; percentage of provincial exams failed; difference between school mark and examination mark in provincially examinable courses; provincially examinable courses taken per student; graduation rate, and a composite dropout rate.

Before considering reform proposals, it helps to understand — to the extent we can — what is currently happening to Aboriginal students in the British Columbia school system. Why do Aboriginal students do so much better in some schools than in others? The statistics assembled in Table 3 provide the basis for a preliminary discussion. The school groupings — bottom 10th, bottom quarter to top quarter and top 10th — are constructed after ranking all 149 schools reporting Aboriginal students (mixed schools) by their school average Aboriginal FSA meet/exceed scores. We emphasize that FSA statistics are available by individual school, not individual students. As a result, we cannot assess the influence of individual family characteristics on individual student outcomes. It is possible, however, to consider the effect, if any, of differences in characteristics of the catchment area for students attending the school.[11]

11 The catchment area is defined as the Census tract (or tracts) in which the school and its immediate neighbourhood are located.

Table 3: *Racial and Neighbourhood Characteristics of Mixed Schools, Average by School Cohorts Ranked in Terms of Aboriginal FSA Meet/Exceed Scores*

	School racial characteristics[b]		
School cohorts[a]	Aboriginal Meet/Exceed Score	NonAboriginal Meet/Exceed Score	Aboriginal Share of Total Student Scores
	1	2	3
		(percent)	
Bottom tenth	30.5	63.1	17.8
Bottom quarter	39.4	68.3	19.5
Second quarter	56.4	74.4	11.2
Third quarter	68.0	76.5	10.4
Top quarter	82.9	82.8	9.3
Top tenth	90.7	83.8	9.8

	School neighbourhood characteristics[c]				
School cohorts[a]	Average Family Income[d]	LICO Rate in School Neighbourhood[e]	Probability of Family being headed by a Lone Parent[f]	Probability of Family Head having trade certificate or more[g]	Probability of school being in a Very Poor Neighbourhood[h]
	4	5	6	7	8
	(dollars)		*(percent)*		
Bottom tenth	45097	22.0	19.1	47.6	13.3
Bottom quarter	45262	22.5	20.0	47.8	15.8
Second quarter	49517	17.9	16.7	51.2	8.1
Third quarter	48163	17.6	15.5	49.4	10.8
Top quarter	50124	14.4	14.7	50.6	0.0
Top tenth	49519	16.0	14.0	50.6	0.0

Notes: [a]Schools are ranked by average meet/exceed score of all Aboriginal students in school.

[b]Averages are calculated for schools in relevant school cohort.

[c]The following variables are derived from the 1996 Canadian Census for the relevant Census tracts or subdivisions surrounding a school.

[d]Average family income in school neighbourhood refers to the relevant weighted mean total income of Census families. The income of a Census family includes the total incomes of all members of that family during calendar year 1995 by persons 15 years of age and over.

[e]LICO rate is the percentage of families below the relevant low income cut-off (LICO) for the family.

[f]Total number of lone-parent families as a proportion of total number of Census families.

[g]See text for definition of education levels.

[h]A "very poor neighbourhood" is defined as school being in a Census tract or subdivision in which the LICO rate exceeds twice the national average of 16.3 percent.

Looking at the neighbourhood characteristics of the mixed schools, the first variable of interest is neighbourhood family income (column 4). Average neighbourhood family incomes are lower for schools with lower Aboriginal performance, suggesting that family income matters to some extent. Families that value education can be found, of course, at all income levels. But, there are a number of routes through which family income can influence children's education attainment. First, poor families often have more humble expectations for their children's careers, and place less emphasis on their academic performance. Second, whether individual parents have either high or low academic expectations, these low expectations may spread through a school population via student peer effects. Third, wealthier parents may monitor school teaching quality more aggressively than do parents of poor families. If parental monitoring matters, schools in wealthier neighbourhoods may recruit better teachers and, in general, perform better.

Neighbourhood LICO rates are another potentially relevant variable (column 5). The LICO rate is, by definition, the fraction of families in a neighbourhood with incomes below a defined threshold. The income effects may be particularly acute in families whose incomes are very low, as measured against such a threshold. Since Aboriginal incomes are lower than average, a high neighbourhood LICO rate almost certainly implies high Aboriginal LICO rates in the neighbourhood, which may impinge on Aboriginal school test scores.

Column six gives the average single parenthood rate for each of the school groupings. Whatever their incomes, parents without partners typically face more demands on their time than do parents with partners who share in the tasks of earning income and parenting. Single parents typically have less time to devote to helping children with their homework or to participate in school affairs. Some evidence on parental education level is presented (column 7). Parents who themselves have achieved a reasonable level of education may, for various reasons, be more likely to have children who succeed at school. Such parents may be more effective in monitoring school performance, more able to help with homework and so on.

In column 8, we present the probability of a school being in a very poor neighbourhood. Many urban analysts emphasize the idea of a neighbourhood tipping point (Wilson 1987; Jargowsky 1996; Hatfield 1997). The concern is that in very poor neighbourhoods the adverse factors are likely to interact negatively and their cumulative effect be more than simple addition would imply. Poverty, low education, single parenthood, high concentrations of culturally marginalized groups, and a culture of welfare dependency all may combine to tip the neighbourhood into ghetto-like status. One of the adverse outcomes of a poor neighbourhood is likely to be poor school results. Not only are parents less likely to monitor school outcomes of their children, it may be particularly difficult in such neighbourhoods to organize effective teams of teachers. A proxy for this tipping effect is that the neighbourhood LICO rate exceeds some threshold. The standard threshold that is used here to define a very poor neighbourhood is that the 1995 neighbourhood LICO rate exceeded 32.6 percent — twice the national 1995 average. Note that nearly one in six of the bottom quarter of schools, in terms

of average Aboriginal school test scores, are in such neighbourhoods. No school among the top quarter is in such neighbourhoods.

The previous discussion has been in terms of neighbourhood characteristics. In addition, it is worth considering the racial composition of these mixed schools. Some of the academically weakest U.S. schools are in inner-city neighbourhoods, with high African-American and Hispanic school populations. There is evidence that schools with large minority racial cohorts have problems with academic performance. One reason is that good teachers are hard to retain. Something analogous may be taking place in Canadian schools with proportionately large Aboriginal student cohorts. If this dynamic matters, Aboriginal student performance may be inversely related to their share of the student population. Consistent with such a story, the Aboriginal student share among poorly performing schools is roughly twice that among the schools performing well in terms of student Aboriginal scores (column 3).

Finally, Aboriginal students may perform better in schools that, for whatever reasons, achieve better non-Aboriginal test scores (column 2). One reason for this effect may be student peer effects. Non-Aboriginal student scores may reflect unmeasured school-specific factors, such as quality of school administration, that impinge on all students.

Table 3 suggests each of the above variables may help explain Aboriginal student outcomes. To consider the relative importance of variables, taken individually and in combination, we undertook preliminary regression analyses. The best attempt at explaining Aboriginal FSA scores using neighbourhood characteristics does not go far (Appendix 2, regression [1]). Neighbourhood characteristics explain considerably more of the variance in non-Aboriginal FSA results (regression [5]). Intuitively, this makes sense. Since the data are averages for the entire neighbourhood and Aboriginals are a minority in all neighborhoods, the neighbourhood averages are better proxies for non-Aboriginal than for Aboriginal family conditions.[12] The regressions provide fairly strong evidence to suggest that FSA results decline, for both Aboriginal and non-Aboriginal students, as the Aboriginal share of the student population rises in any school (regressions (3), (4) and [6]). Finally, the most important single variable, in terms of ability to explain variance across schools in Aboriginal outcomes, is the school non-Aboriginal meet/exceed FSA score (regression [2]). This supports the thesis that a rising tide lifts all boats. As a school improves, students tend to rise academically as an overall group, independent of race.[13]

There is much uncertainty as to the ultimate causes of academic performance among children. What is worth retaining from this analysis is that, almost certainly, in-school dynamics, such as the performance of non-Aboriginal students within the same school, matter in understanding Aboriginal performance. And it behooves those responsible for education policy to think hard about the likely effects of their policy decisions on in-school dynamics.

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12 The data on neighbourhood characteristics are drawn from published information at the Census tract level. Data on Aboriginal families at this level of disaggregation are not published.

13 Conclusions about the importance of the school non-Aboriginal average FSA score must be qualified. Multi-collinnearity among regressors is high.

Proposed Reforms for Aboriginal Primary and Secondary Education

The previous section provides an introduction to the complexities facing parents, teachers, school administrators and politicians in attempting to improve Aboriginal student outcomes. In spite of these complexities, we step in — where many angels have feared to tread — and propose four alternatives that bring together ideas currently being discussed to reform Aboriginal education.

We describe briefly what we take to be the multiple goals appropriate to Aboriginal education policy, and then discuss and evaluate four archetypal alternatives: 1) a separate-school alternative; 2) a student-mobility option; 3) provision of magnet or charter schools, and 4) a school enrichment alternative.

These alternatives are worthy of consideration across Canada, but they should be of particular interest in western Canada because over half of all Aboriginals live in the four western provinces, and increasingly in urban communities. If we rank Canadian cities by number of Aboriginal residents, seven of the top 10 are in the West. More Aboriginals live in Prince Albert than in Montreal.[14]

Appropriate Policy Goals

Improving Aboriginal education is not a simple exercise. It entails tradeoffs among multiple goals that are usually not explicitly stated — at least not at the same time nor in a manner that encourages consideration of the tradeoffs. It is useful to specify the multiple goals at stake, and what they mean to the interested constituents.

Enhancing Aboriginal Academic Achievement

The first, and arguably the most important, goal is student academic achievement. Student scores in jurisdiction-wide tests, such as the FSA, are of increasing importance in measuring student achievement. While obviously these tests do not measure all aspects of education, they are a useful tool.

There are several distinct aspects of academic achievement that matter:

- Potential impact of a policy option on performance of students with weak academic records, many of them in poor neighbourhoods;
- Impact on performance of average students, most in non-poor neighbourhoods, and
- Impact on the student dropout rate.

Because all three aspects are important, we use them in the comparison and evaluation of the alternatives.

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14 With number of Aboriginal residents in parentheses, the top 10 cities according to the 2001 Census are Winnipeg (56,000), Edmonton (41,000), Vancouver (37,000), Calgary (22,000), Toronto (20,000), Saskatoon (20,000), Regina (16,000), Ottawa-Hull (13,000), Prince Albert (12,000), Montreal (11,000) (Canada, 2003, 23).

Lowering School Program Costs

A second goal is to contain school program costs. Including this goal is not to deny resources to Aboriginal schooling. One of the central conclusions of recent education research is the weak link between extra resources and improved education outcomes. In general, improving education outcomes is not primarily a matter of spending more money (Hanushek 2002). This is almost certainly true for off-reserve Aboriginals. On the assumption that resources saved can fruitfully be used to provide other services to Aboriginals, we include lower costs as a policy goal.

Minimizing Inter-Racial Separation

Aboriginal educational reform is a sensitive issue due to the reality of a racial division in Canada. Attempts to improve Aboriginal education outcomes, as opposed to improving educational outcomes for all students, are likely to exacerbate this division. This is especially true off-reserve where Aboriginal reform is much more visible to other educational stakeholders. A goal in assessing options is to pursue policies that minimize the division and promote inter-racial reconciliation.

Enabling Parental Choice

The idea of one neighbourhood school that all local children attend is intimately bound up with the rationale for a public school system. Universal attendance of children at the local school expresses a range of ideals:

- Equal education opportunities for all children independent of parents' incomes and social standing;
- Children learning tolerance for social and ethnic differences, and
- Children imbibing the values necessary for a sense of shared citizenship.

For many, attendance at the neighbourhood school is the next most important goal of the education system after educational achievement.

On the other hand, the evidence — from the FSA tests we analyze and from many analogous studies — is incontrovertible. Some neighbourhood schools, especially in poor areas, perform inadequately. One policy response to poorly performing neighbourhood schools is to encourage parental choice. Parental choice can take many forms. At the modest end of the choice continuum, it may simply entail the breaking down of school catchment boundaries and permitting parents to send their children to any public school within a school district. Further along the continuum, it may enable the existence of multiple publicly funded school systems within the same community. More controversially, it may entail provision of education vouchers to parents who can use them to buy education services from whatever public or private schools they choose.

One argument for choice is that parents are the best judges of their children's interests, and this gives them the right to choose their children's school. This is essentially a private benefit. There may also be an external benefit from choice. Parents' choosing good schools and shunning the bad ones may enhance the overall quality of all schools, public and private.

The argument over school choice is not simple. Opponents fear parental choice will lead inevitably to a more stratified inter-generational school system that accentuates social inequalities. In the United States, opponents have often couched their argument in terms of the principle of separation of church and state: no public education funds should be made available to fund denominational schooling (McConnell 2000). In Canada, separation of church and state enjoys no constitutional sanction, three provinces have publicly funded denominational school systems, and half the provinces (including British Columbia) make public funds available to students attending independent schools, whether religious or not (Robson and Hepburn 2002).

School choice opens the prospect of various equity problems. Well-educated, prosperous parents will make sure their children attend good schools — which may well be private. If they send them to private schools, they may abandon monitoring of neighbourhood public schools. Less-educated, poorer parents typically have less interest in education quality (because their employment expectations for their children are less ambitious) and less ability to lobby school boards effectively for better quality. The result may be a downward spiral for public schools in poor neighbourhoods. There is evidence to suggest that this concern is well founded (Weiher and Tedin 2002; Ladd and Fiske 2001).

Because of these problems, it is naïve to analyze Aboriginal school reforms without acknowledging a tension between the education ideal promoted by partisans of parental choice and proponents of the neighbourhood school that all local children attend.

Minimizing the Institutional Complexity of Reform

Institutional complexity raises at least two problems. For one thing, the more complex a proposed education reorganization is, the more likely that some unexpected event will intervene to confound expectations for improvement. For another, the more complex the reorganization, the more disruption of established interest groups is entailed, and the less likely is it to be fully implemented.

As a result, all things being equal, incremental reform is both more feasible and preferable.

Four Alternatives for School Reform

We turn to the exercise of assembling the four alternatives, and evaluating them in terms of the goals discussed. Table 4 summarizes our assessment.

Separate schools. This arrangement would enable Aboriginals within a community to create autonomous school authorities and control public funds for a subset of public schools in the community. Throughout the 20th century, large numbers of black Americans migrated from farm and rural villages to live and work in urban America. For similar reasons of economic advancement, Mexicans continue to cross the Rio Grande. Many of the problems faced by Aboriginal students in urban schools are similar to those faced by the children of these recent migrants within and to the United States. There may well be lessons for Canadians in the U.S. education experience.

Over the last three decades, many U.S. school districts have achieved considerable convergence between black and white students in tests — similar to the FSA — of core curriculum performance. In a recent analysis of this convergence, Cook and Evans (2000, 749) conclude that "nearly 75 percent of the convergence is due to changes within schools, that is, to a narrowing in the gap in test scores between white and black students with the same level of parental education and who attend the same school. Cook and Evans note, however, an important problem. They find some evidence to suggest that black students are increasingly to be found in schools of lower quality. To the extent this is so, the explanation appears to be some combination of neighbourhood residential segregation by race and income, and abandonment of the public school system by many middle-class urban parents.

Similarly in Canada, there is a trend towards Aboriginals living disproportionately in very poor urban neighbourhoods and attending schools where the academic performance is generally below that in non-poor neighbourhoods. If we define as weak those mixed schools in which the overall meet/exceed score is below the relevant bottom quartile, only 16 percent of the scores of non-Aboriginal students are from these schools, against 29 percent of the scores of Aboriginal students.

Because of this concentration in relatively weak schools, some commentators make the case for schools that engage Aboriginal families more intimately and that make more extensive use of Aboriginal culture within the school curriculum. The rationale for such structural innovation is the need to replicate in an urban environment what Allan Blakeney has termed the "cultural comfort" of the reserve:

> I see it as next to impossible for us to be able to create reserves which provide an appropriate economic base for all or most of the growing population of Aboriginal people. We know that some will wish to remain [on-reserve] …We know that some will move to the cities and integrate with the economic mainstream. We know that some will move back and forth — a transitional group … [Aboriginals] leave the reserve because there is no economic opportunity for them and particularly for their children. It seems to me that they return to the reserve because on the reserve they experience a sense of place … and also because on the reserve they have a level of cultural comfort. (Blakeney, quoted in Richards 2001, 24-25)

We do not have evidence directly applicable to Aboriginal education outcomes. There is however evidence to suggest that separate schools, controlled by cultural minorities produce increased educational attainment among the children (Evans and Schwab 1995; Neal 1997). Inspired by the precedent of distinct public-school systems in many provinces based on language and religion, Blakeney proposed an Aboriginal-based system in cities with large Aboriginal communities.

Entrenchment of the minority language rights provisions of the *Charter of Rights and Freedoms* (in sections 16-to-23) and subsequent Supreme Court decisions based on the Charter have enabled some Francophone communities outside Quebec to establish autonomous francophone school boards. Such boards may help, but they are not a cure-all for preserving French language use. In the same way, Aboriginal-controlled separate schools are unlikely to be a panacea for urban Aboriginals hoping to preserve cultural distinctiveness.

Table 4: *Policy Alternatives for Aboriginal Education Reform*

Goals	Alternative One: "Separate Schools"	Alternative Two: Student Mobility	Alternative Three: Magnet School	Alternative Four: School Enrichment
Enhancing academic achievement				
Impact on students in poor neighbourhoods	potential to increase aboriginal parental involvement; probably a positive effect on these students	modestly positive effect (based on evaluation of U.S/ school choice experiments)	positive cultural aspect may benefit low-achieving students from poor neighbourhoods	small but not trivial; subject to Hawthorne effect; innovations must be evaluated
Impact on students in typical neighbourhoods	small or no effect	negligible, provided migrating students are small share of receiving school	uncertain result, much depends on quality of magnet school relative to quality of neighbourhood school	as above
Impact on dropout rate	potential exists to reduce dropout rate	small impact	cultural aspect may help lower rate among low-achieving students	as above
Lowering school program costs	highest incremental costs, requires administrative duplication	medium incremental costs, much depends on premium offered for migrating students	low incremental costs, requires staffing one or more magnet schools	low/medium incremental costs, depending on scope of enrichment programs
Minimizing inter-racial division	potential to improve interracial relations in medium term; potential for short-term conflicts over access to financial resources and perceived threat to racially integrated schools	may provoke non-Aboriginal opposition	as with "separate school" model	little impact
Enabling parental choice	significant increase in school choice for Aboriginal parents	as with "separate school" model	provides school choice for students who gain access	no change from status quo
Minimizing administrative complexity of reform	entails major administrative adjustments	few administrative problems; many precedents exist	more complexity than option two, less than option one	minor administrative problems

Still, greater engagement of Aboriginal parents and provision of cultural comfort in a separate school system would probably improve academic performance for weak Aboriginal students and lower their dropout rates (Table 4). Another benefit that weighs in favour of setting up an Aboriginal school system is the potential for creating a group of Aboriginal leaders with a stake in the success of urban, as opposed to reserve-based, Aboriginal communities.

On the other hand, the danger exists — here and with magnet schools — of creating an Aboriginal system with a reputation for low standards. According to the FSA results, schools with large Aboriginal cohorts do not, in general, enjoy high academic standards. Administratively, this is the most complex of the four alternatives, and its implementation explicitly challenges the ideal of the universal neighbourhood school.

If provinces are to undertake this particular innovation, it is important that they impose clear guidelines to minimize potential problems. The following conditions should apply:

- Parents, both Aboriginal and non-Aboriginal, should have freedom of choice of either Aboriginal or conventional schools for their children.

- Aboriginal school authorities should be democratically elected by parents of all children in the system, including non-Aboriginal parents who choose to place their children in a school falling under their jurisdiction.
- To maintain standards, all schools should be required to teach the provincially mandated core curriculum, and all students should take province-wide exams in core subjects.
- School administrations must be shielded from political pressures that may seek to lower standards.

These conditions are approximately the same as those that have underpinned the successful co-existence of Catholic and non-denominational public school systems, as well as those based on one of the two official languages. The fourth point raises the requirement that any urban Aboriginal school authority must address results. Pressure to avoid outcome measurement would not be unique to this model of Aboriginal-run schools. But the need to resist such pressure and establish educational legitimacy would be greater for such schools, particularly in the short term.

Enhanced student mobility: Greater mobility would enable Aboriginals to attend already existing good schools by eliminating school catchment boundaries, and potentially by subsidizing mobility. Student mobility is of particular relevance for parents wanting to avoid poorly performing schools. A choice among schools is usually not feasible in rural areas where they are widely dispersed. However, Aboriginals are increasingly living in urban areas where choice becomes feasible. In terms of Aboriginal FSA meet/exceed scores in the bottom quarter of provincial schools, 21 out of 37 are in five urban school districts in metropolitan Vancouver or the Fraser Valley: Vancouver (7), Surrey (7), Langley (2), Abbotsford (2), Chilliwack (3). Aboriginal students attending these 21 schools make up, in turn, over half the total count of Aboriginal students in poorly performing schools.

Milwaukee is among the best known and most radical of U.S. school choice experiments. It has been operational since 1990. Targeted on families whose incomes are less than 175 percent of the designated poverty line, it offers vouchers enabling students to attend private schools. In the 1997/1998 school year, the state-funded program granted US$4,700 per student for tuition. The number of vouchers is limited and students are selected randomly from eligible applicants. In a survey of this and similar experiments, Sawhill and Smith conclude that results are "modestly encouraging." They note, however, that the evidence that the Milwaukee experiment has improved student achievement is mixed:

> One study, by Paul Peterson and his colleagues, found that by the third and fourth year of the program, choice students [i.e., those in the program] had made sizeable gains relative to their public school counterparts in both reading and math. Another study, by John Witte and his colleagues, found no differences between the two groups. And a third study, by Cecilia Rouse, found gains in math but not in reading. There are several reasons for these differences, including how each research team selected its control or comparison group and how they chose to adjust for any remaining differences between students who took advantage of the voucher and those who remained in the Milwaukee public schools. After carefully reviewing these three studies, we conclude that … it is simply not possible at the

current time to render a clear verdict on the outcomes of the experiment. (2000, 274-75)[15]

The evidence, at worst, suggests no difference. However, there are strong indications that enabling modest levels of competition among schools and school districts — reforms less radical than the Milwaukee voucher program — do improve school results (Bishop 2000; Borland and Howsen 1992; Zanzig 1997).

In their recently published study, Cowley and Easton (2004, 3) argue that "all Aboriginal parents should have the unfettered right to enroll their children in any school that they choose." We, too, support expansion of school choice, although with more qualifications. A modest parental choice model with a potential to improve Aboriginal school performances would be one that let Aboriginal parents send their children to any school within a school district, independent of school catchment boundaries.

British Columbia recently made a legislative change that renders such a reform more feasible.[16] Within the province, parents can now choose any public school for their children. The caveat is that children within the school catchment area have first priority, and determination of space available to students beyond the catchment area is at the school district's discretion. The discretion afforded to schools in deciding whether space is available weakens the impact of this reform for all students. Even under present rules, this discretion seems to have had an impact within the Vancouver school district. There is informal evidence that parents are choosing better performing schools, in terms of test scores, over less well performing schools within the school district (Steffenhagen 2003).

A choice alternative should include appropriate incentives for good schools to welcome Aboriginal students. To encourage good schools to do so, school boards could give the recipient school a payment based on the number of migrating children it accepted. If school boards are anxious to avoid explicit racial targeting, the mobility bonus could be made contingent on income, as is the case in the Milwaukee experiment.

This system is of primary benefit to Aboriginal parents conscious of the value of academically good schools, and willing to incur the extra costs of sending their children to a non-neighbourhood school (Table 4). This alternative poses much less administrative complexity than does the separate school option. There are many precedents, both in Canada and the U.S., of programs that encourage modest levels of school choice by, for example, eliminating school catchment areas and enabling parents to choose any school within the district. Radical school choice options, such as that in Milwaukee, would provoke active opposition from defenders of the public school system.

Magnet schools: This system designates one or more schools within a district that will concentrate on Aboriginal cultural studies. A magnet — or charter — school

15 For access to the three studies of the Milwaukee school choice experiment mentioned in this quotation, see Greene et al. (1996), Rouse (1998), and Witte (2000).

16 The *School Amendment Act, 2002*, provides that students can attend any school in the Province of British Columbia. A summary of the act's provisions is available at www.bced.gov.bc.ca/legislation/legp502.htm

refers to a tax-funded institution within a public school system that holds a charter specifying that it will specialize in a particular field of study. Any student in the school district can elect to attend the school, subject to its capacity.

An interesting Canadian example of a magnet school is the Amiskwaciy Academy (2003), recently launched by the Edmonton school district. This is a secondary school within the school district, with a mandate to specialize in Aboriginal cultural studies. The school is part of the Edmonton system and is tax-financed. It follows the same core curriculum as other Alberta schools, but supplements it with courses on Aboriginal history, literature, and culture. Provided they live in Edmonton, all students, whether Aboriginal or not, are eligible to attend.

In terms of the goals laid out, magnet schools offer a compromise between the school enrichment and separate school alternatives. The magnet school alternative affords one or more schools that explicitly encourage Aboriginal studies, without the administrative complexity that would accompany establishing a separate school authority.

School enrichment: This refers to providing additional resources to improve the performance of schools with proportionately large Aboriginal student populations. For example, the British Columbia government includes numbers of Aboriginal students in the funding formula for school boards. The Vancouver school board currently provides such schools with extra library resources bearing on Aboriginal literature, arts and history. School boards can supplement the budgets of these schools to engage Aboriginal elders as counselors, and to hire highly motivated teachers.

Improving the quality of education services offered by those neighbourhood schools with large Aboriginal student cohorts is a strategy relying exclusively on the supply-side. This is a weakness. In addition to school authorities' determining school quality, the three other alternatives also invoke parental choice, which is in effect a demand-side check on school quality. Were a separate Aboriginal school system to exist, parents would be able to choose between systems. The enhanced mobility variant we put forward would open up choices for Aboriginal parents among good schools within all urban school districts and offer a financial payment to recipient schools. If one or more magnet schools exist, again, Aboriginal parents can exercise some degree of choice. This fourth alternative involves no extension of parental choice.

A potential problem with school enrichment is the "Hawthorne effect", the frequently observed phenomenon that short-term results improve immediately following an experimental intervention, regardless of the nature of the intervention. The immediate improvement may have more to do with the change in routines and attention paid by supervisors. To determine whether the improvement has a lasting effect, longer-term evaluation is necessary.

Each of the four alternatives does better on some goals and worse on others. None will yield positive results without a sustained commitment from teachers, administrators, local and provincial politicians to engage the problems of Aboriginal education and consult with Aboriginal parents. This will require detailed public benchmarking of the status quo (as British Columbia is doing with the FSA), a willingness to experiment (as, for example, the Edmonton school board

is doing with a magnet school) and evaluation of outcomes which, as the Auditor General noted with respect to on-reserve schools, no jurisdiction is doing adequately.

Having completed an assessment of the alternatives, we conclude with our own recommendations. We are not in administrative positions and we do not have in mind the relevant details of particular school boards. As a result, our recommendations are tentative. Aboriginal student FSA scores in British Columbia are lower in schools with relatively large Aboriginal student cohorts and higher in schools where non-Aboriginal students do well. The schools in which Aboriginal students are faring poorly may be doing their best under difficult neighbourhood conditions, and Aboriginal students in these schools may be learning more about Aboriginal culture than they would in a typical school with few Aboriginal students. However, the present emphasis on students attending the neighbourhood school effectively obliges a disproportionate number of Aboriginal parents to send their children to schools with weak academic standards.

Because of the probable importance of in-school dynamics, we doubt that the supply-side effects of school enrichment can ever be sufficient. Some greater resort to the demand-side — in other words giving a greater role to Aboriginal parental choice — is required.

An agenda for any school board prepared to tackle aggressively the matter of Aboriginal education should, we suggest, be a combination of the second to fourth alternatives:

- Relaxation of neighbourhood school boundaries, combined with a financial bonus to schools to encourage them to accept Aboriginal students migrating from beyond the relevant school catchment area;
- In large urban communities, creation of one or more magnet schools concentrating on Aboriginal cultural studies, and
- Generous programs of school enrichment for schools with large Aboriginal student cohorts.

Conclusion

Low levels of education are a major cause of the chronic poverty in Canadian Aboriginal communities. Aboriginal educational outcomes in British Columbia are clearly inadequate, but in most other provinces they are worse. Indeed, British Columbia deserves credit for collecting and making available the most complete data on Aboriginal education results. It is time for the prime minister and the premiers to rethink their Aboriginal policy priorities and raise the importance accorded to education outcomes. It is time for action.

Appendix 1: Description of the Foundation Skills Assessment (FSA) Program

The Foundation Skills Assessment is an annual province-wide assessment of British Columbia students' academic skills, and provides a snapshot of how well B.C. students are learning foundation skills in Reading Comprehension, Writing, and Numeracy.

The assessment is administered every spring to Grade four, seven and 10 students in public and provincially funded independent schools.

FSA is designed and developed by British Columbia educators. The skills tested are linked to the provincial curriculum and provincial *performance standards*.

The main purpose of the assessment is to help the province, school districts, schools and school planning councils evaluate how well students are achieving basic skills, and make plans to improve student achievement.

FSA is an integral part of government's commitment to ensuring quality education for all students.

FSA results, together with other information collected by teachers, provide important information for district accountability contracts and for school growth plans developed by school planning councils.

FSA results are produced for the province, district, school and individual students. FSA results are returned to districts and schools each fall to help develop school plans for improving student learning, and to share with individual students and parents.

For several reasons, the FSA results for Aboriginal students are incomplete. First, student identification as Aboriginal when sitting the FSA exams is voluntary. To preserve confidentiality, the department does not reveal data for aboriginal students when the aggregate number of scores in a school is below five. Anecdotal evidence indicates that some schools intentionally withhold Aboriginal student results; the motivation for doing so is not clear. For all these reasons, FSA scores by individual schools for their Aboriginal students must be treated with caution. Despite these shortcomings, the FSA exam results provide valuable insight into off-reserve aboriginal student performance.

Appendix 2: Regression models to explain Foundation Skills Assessment (FSA) results among Aboriginal students in British Columbia, 2000/2001 school year

Dependent variable	School aboriginal meet/exceed FSA score (log of odds ratio of school aboriginal meet/exceed scores)				School non-Aboriginal meet/exceed FSA score (log of odds ratio of school non-Aboriginal meet/exceed scores)	
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	.4681	-.4534***	-.1602	.3047*	-.6031	-.3300
Average family income in neighbourhood (thousands of dollars)					.0062	.0057
Neighbourhood LICO rate (percent)	-.0104*			-.0167***	-.0038	-.0035
Percent share with a trades certificate or higher education level (percent)	.0121*				.0362****	.0328****
Percent of families headed by a single parent (percent)	-.0249**				-.0146*	-.0129*
Count of Aboriginal student scores as share of total count of scores in school (percent)			-.0067**	-.0092***		-.0089***
School non-Aboriginal meet/exceed average FSA score – see note (log of odds ratio)		.7724****	.5963****	.3047*		
R-square, adjusted	.08	.15	.20	.21	.20	.23

Notes: Dependent variable is a percentage of either Aboriginal or non-Aboriginal student scores, by school, which meet or exceed expectations. The functional form estimated is a logistic curve, in which the dependent variable is the log of the odds ratio. The school non-Aboriginal average meet/exceed score employed as a regressor in regressions (2), (3) and (4) is an instrument constructed using predicted non-Aboriginal scores from regression (6).

Level of significance is indicated by the following legend:

* 0.20 significance (one-tail t-test)
** 0.10 significance (one-tail t-test)
*** 0.05 significance (one-tail t-test)
**** 0.01 significance (one-tail t-test)

The following variables are derived from the 1996 Canadian Census.

Average Family Incomes in School Neighbourhood: Average Census family income refers to the weighted mean total income of Census families in Census tracts or subdivisions surrounding schools. The income of a Census family includes the total incomes of all members of that family during calendar year 1995 by persons 15 years of age and over.

Neighbourhood LICO rate: The rate is the percentage of families below the relevant low income cut-off (LICO) for the family.

Education level: The sum of those 15 years and older whose highest level of education is a trades diploma/certificate or greater.

Lone parenthood: Total number of lone-parent families as a proportion of total number of census families.

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