



# Supplementary funding policy raises literacy skills of B.C.'s Aboriginal students

The relatively poor educational outcomes of Aboriginal students in Canada are a persistent source of serious concern to policy makers. An important priority is to identify policies and programs that support the development of essential literacy skills. But credible quantitative research, to evaluate the true effect of promising strategies, has been thin on the ground.

This research briefing reports on the impact of a policy intended to support students' language development in the Canadian province of British Columbia. B.C. allocates supplementary funding to its school districts to support students who speak a 'non-standard' English dialect. In practice, the designated students who attract this funding are almost exclusively Aboriginal.

The Centre for Education Research and Policy at Simon Fraser University (CERP) noticed a large increase in the numbers of students receiving this 'English as a Second Dialect' (ESD) designation in the early 2000s. Thanks to sharp variation in uptake within and across school districts, CERP was able to isolate and estimate the effects on Aboriginal students' achievement.

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**In B.C. public schools, the proportion of Aboriginal students designated for ESD tripled between 1999 and 2004.**

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CERP measured the effect on Aboriginal students' test score gains between grades 4 and 7 of the proportion of students in their districts who attract the supplement. *The supplementary funding policy is found to have been highly effective at improving the reading skills of the average Aboriginal student.*

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**For a school district receiving the supplementary funding for 22 per cent of its Aboriginal students (the average district ESD designation rate in the period studied), the improvement is equivalent to narrowing the reading achievement gap with non-Aboriginal students by 18 per cent.**

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In the absence of this policy, the reading achievement gap between Aboriginal and non-Aboriginal students would be perceptibly larger than it is at present. B.C.'s policy has been providing impressive support for the literacy skill development of Aboriginal students. This research will interest all those, in any jurisdiction, who are concerned to improve the educational outcomes of vulnerable groups of students.

## the *policy*

B.C.'s Ministry of Education allocates funds to support students who “speak variations of English that differ significantly from the English used in the broader Canadian society and in school”. Eligible students are identified by their school district, which receives a per capita supplement of \$1,100 to the base grant, subject to a five-year limit. In practice, virtually all of the students designated to attract this supplement have been Aboriginal.

The specific services to be provided are not mandated, and districts appear to apply the funds in a wide variety of ways, including: supporting the use of specific pedagogical strategies for vocabulary development; hiring specialist teachers that provide support to classroom teachers and develop program materials; offering specialized oral language instruction on a weekly pull-out basis; acquiring reading materials with culturally-relevant content; or integrating strategies for oral language development into regular literacy programs.

One rationale for the supplementary funding may be that the dialects spoken by some students differ from the ‘standard’ English used for classroom instruction in ways that may make it harder for classroom instruction to be effective. Some specialists have suggested that programs which acknowledge and focus on the differences between student dialects and the standard dialect could be effective in promoting language development.

In 1999, four out of 59 public school districts designated at least 5 per cent of grade 4 Aboriginal students for ESD. By 2004, this number had expanded to 16. Such large, sudden changes in a program’s scale create an opportunity to evaluate its effects. CERP decided to find out what difference the supplementary ‘English as a Second Dialect’ (ESD) funding has been making for Aboriginal students.

The research reported here cannot identify the different local strategies implemented thanks to ESD funds, or distinguish between their effects. It can only detect any overall difference made to the average district by the extra injection of resources. Furthermore, actual practices enabled by the funding may be consistent with a variety of philosophies regarding how best to support Aboriginal learning.

## the *data*

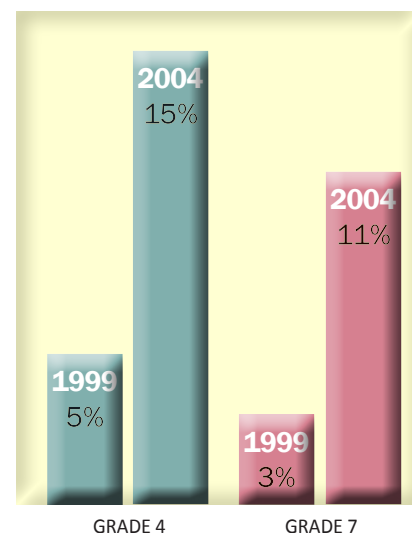
B.C. administers Foundation Skills Assessments (FSAs) in reading and numeracy to all students in grades 4 and 7. CERP used encrypted identification numbers, unique to each student but anonymous in the data, to link the Ministry of Education’s FSA database with its enrolment database, which records information such as self-reported Aboriginal status. A longitudinal data set was constructed covering every student who was in grade 7 from 2002 through 2004 and in grade 4 three years earlier.

## a research *challenge*

To discover what difference the policy makes, it does not help to compare designated students with non-designated students. Students tend to be designated because of the educational challenges they face, so they will differ from other students in terms of the educational outcomes one would expect to observe.

Focusing on test score *gains* – the progress students make between tests – can help researchers abstract from the differences between different groups of students at the starting point. This is the technique sometimes referred to as ‘value-added’ assessment. However, different groups of students tend to have different educational *trajectories*, as well as different starting points. One should expect to observe different patterns of progress, other things equal.

FIGURE 1  
The percentage of Aboriginal students in ESD has grown rapidly since 1999



Source: Authors' calculations, based on B.C. Ministry of Education data

Different districts introduced or escalated ESD designations at different times. Can we compare how students achieved in different districts? Such a comparison is prone to be quite biased. Districts often serve quite different populations. There would be no way to tell whether the effect of the policy effect itself was being measured, separately from pre-existing differences between students in different districts.

Aboriginal students in ESD scored lower in grade 7 reading FSAs than non-Aboriginal students (by almost 1.0 standard deviation) and than other Aboriginal students (by over 0.4 standard deviations). They also fell further behind other students between grades 4 and 7. The value-added gap with non-Aboriginal students was 0.13 standard deviations, and with other Aboriginal students it was 0.05 standard deviations.

Because designation is not random, these comparisons cannot tell us anything about the effect of the policy. Clearly, the real question is whether these gaps would have been even wider but for the supplementary funding policy. To isolate the effect of the policy, we must take a different tack.

### the method

CERP's solution is to calculate how year-to-year changes in the size of ESD enrolment *within* school districts affect achievement. This avoids comparing different, incomparable districts. Instead it compares districts to themselves, with only the level of ESD funding varying. This separates the effect of the supplementary funding from all the other things that can affect achievement, and that may vary across districts.

CERP compared the grade-4-to-grade-7 test score change of the average Aboriginal student in a given district to that of the average Aboriginal student in the same district who is in grade 7 in a different year – when ESD embraced more or fewer students.

Figure 2 (below) captures the idea. Picture successive cohorts progressing through the grades in a school district. At the end of grade 7, each will show a different average test score gain, representing the progress students have been making through grades 5, 6 and 7. Meanwhile, each cohort was also exposed to a different average rate of ESD designations in those grades, representing the resource inputs created by the supplementary funding policy. Now we can compare the test score gains of different cohorts as a function of district average ESD rates.

This process is repeated for every district, and the average calculated across districts – controlling for anything that may be changing at provincial level from year to year, such a background trends in test scores.

District-level changes in designation rates were large and abrupt, so cannot be correlated with changes in student characteristics, which evolve much more gradually. Changes in student characteristics are therefore not responsible for any improvement that may be detected.

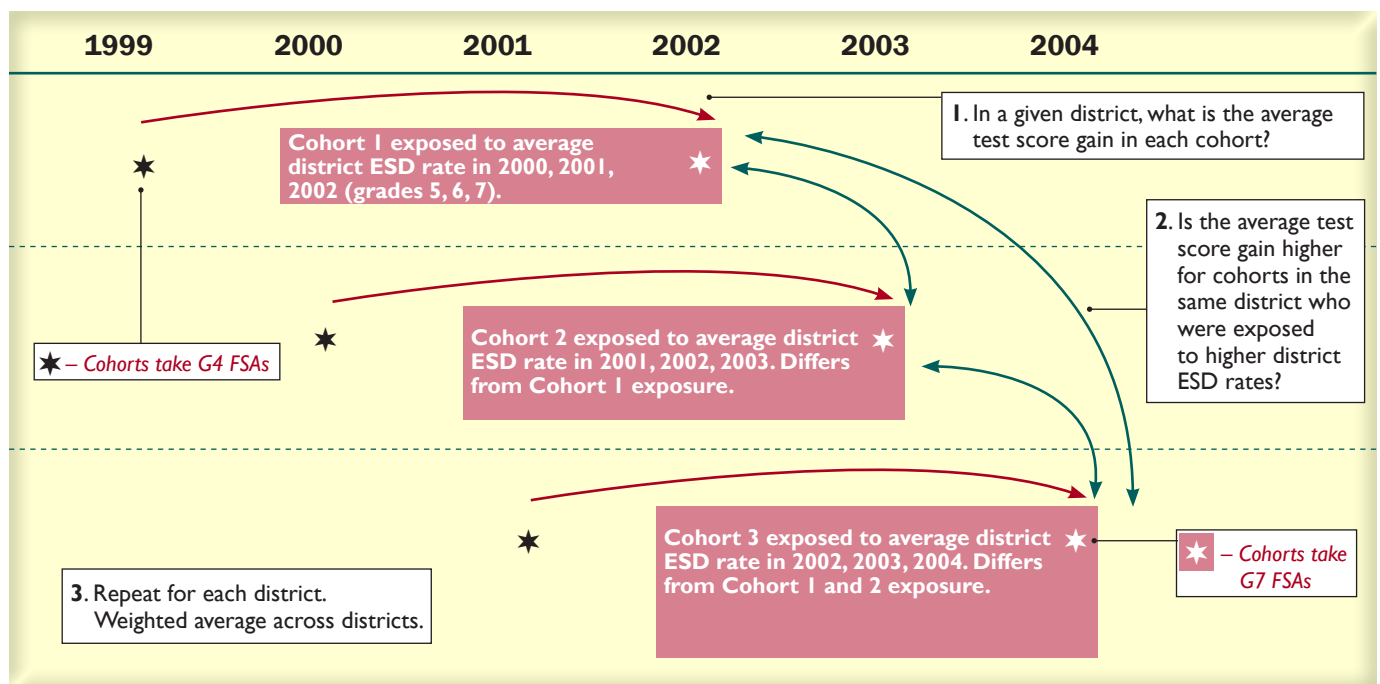


FIGURE 2

Why measure the effect of ESD funding on all Aboriginal students, instead of just on those with ESD designations? Because non-participants could, feasibly, benefit from the policy indirectly – from academic improvement of peers, injection of extra resources, development of better materials, and so on. The true overall effect of the policy is best evaluated by looking at the outcomes of all Aboriginal students.

## the *finding*

The supplementary funding policy has produced real and impressive benefits for the literacy development of B.C.'s Aboriginal students. The reading test score gain of the average Aboriginal student is greater when the district receives funding for a greater proportion of Aboriginal students, all other things being equal.

The effect is quite substantial. A 10 percentage point increase in the proportion of ESD students in a district produces an average increase in Aboriginal reading test score gains of 0.048 standard deviations over the course of three years. To appreciate the significance of this effect, take the example of a hypothetical district that designated 22 per cent of its Aboriginal students for ESD funding – the average enrolment over the time period studied. Such a district would be expected to increase the reading test score gain of Aboriginal students by around 0.11 standard deviations. This corresponds to 18 per cent of B.C.'s grade 7 reading gap between Aboriginal and non-Aboriginal students.

The study cannot confirm how much of the improvement accrues directly to ESD students, and how much to other Aboriginal students as a result of beneficial 'spillover'. However, CERP finds suggestive (inconclusive) evidence that the positive effects are greatest for students with weaker literacy skills. The improvement for the bottom 25 per cent of students appears to be almost twice as large as the improvement for the top 25 per cent.

CERP doesn't know the story behind the success. A wide range of different strategies were undertaken in districts, schools and classrooms as a result of the policy, and this research is not able to distinguish their different effects. It would be valuable to know more about how the resources released by this policy have been employed by the Aboriginal education community of practice, in order to help improve the school experience for other Aboriginal young people in B.C. and beyond.

## final *checks*

A potential problem with the use of test scores to measure achievement is that it restricts attention to students who participate in the tests. What if the change in ESD designations coincided with changes in patterns of test participation? For example, maybe there was a tendency to excuse ESD students from participation, which intensified as ESD grew. Such a circumstance, rather than genuine improvements in academic achievement, might then explain the positive impact CERP has found.

This hypothesis is testable. CERP ran the same calculations, but replaced test score growth with test participation as the outcome of interest. Was district ESD designation rate associated with a decrease in the participation of Aboriginal students in grade 7 exams? The answer is no. In fact, district ESD designation rates are associated with slight increases in test participation, ruling out the scenario in which ESD students are systematically discouraged from taking tests. This strongly indicates that the positive effect of the supplementary funding policy is not an artifact of changes in exam participation patterns.

What if ESD growth is accompanied in each district by other policy changes that happen to improve test scores? This too can be investigated. Such a change in other district policies should be expected to show up in numeracy scores, as well as in reading scores, and for non-Aboriginal students as well as Aboriginal students. But the policy in question is intended to help with development of language skills among Aboriginal students. If the study is measuring its effect correctly, it will be much more likely to find an effect on reading than on numeracy, among Aboriginal students. And there is no reason to expect any impact on non-Aboriginal students.

The effect on Aboriginal numeracy exam outcomes turns out to be virtually zero. There is no effect at all on non-Aboriginal students. This boosts the credibility of the finding: CERP has isolated a genuine connection between the supplementary funding and significantly improved reading achievement of Aboriginal students.

**in** *brief*evidence for decisions  
July 2009English as a Second Dialect  
program raises literacy skills  
of B.C.'s Aboriginal students

School may be particularly challenging for students from communities that speak non-standard forms of English, such as African American Vernacular English, or First Nations English in Canada. Educators have suggested that programs which acknowledge and focus on the differences between such students' dialects and the standard dialect may be effective in promoting language development.

However, despite the critical importance of improving the literacy skills of under-achieving minority groups, the Centre for Education Research and Policy (CERP) is aware of no systematic evaluations of policies designed to support English as a Second Dialect students.

The Canadian province of British Columbia (B.C.) allocates funds to support Aboriginal students who "speak variations of English that differ significantly from the English used in the broader Canadian society and in school". CERP noticed a significant increase in the numbers of students being designated for this "Standard English as a Second Dialect" (SESD) programming in the early 2000s. Thanks to sharp variation in uptake within and between school districts, it becomes possible to measure the benefits of targeted funding for speakers of non-standard dialects.

**The results indicate that the SESD initiative has been highly effective at improving the reading skills of Aboriginal students.**

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**the** *preview*

- B.C. allocates supplemental funding to school districts based on numbers of Aboriginal students designated for Standard English as a Second Dialect. Staggered uptake of SESD funds permits program evaluation.
- The research team calculates the "value added" for individual students between grades 4 and 7 tests in reading and numeracy – how much did scores improve? – and measures how progress of Aboriginal students varies according to the rate of SESD enrolment in their district.
- The study finds that a 10 percentage point increase in the proportion of SESD students in a district is associated with an average increase in Aboriginal score gains of 0.048 standard deviations. Given average SESD enrolment, this corresponds to about 18% of the grade 7 reading gap.
- Not due to changes in patterns of test participation – no effect on numeracy proficiency of Aboriginal students.
- Not due to independent policy change at district level – no effect for non-Aboriginal students.
- Suggestive evidence that positive effects are greatest for the weakest students.