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How Unequal Are Their Vertical Equity Measures? A Comparison of Three Canadian Provinces

The purpose of this study was to compare the foundation allocation and three special allocations for special-needs students, ESL students, and students with low socioeconomic status in Ontario, Alberta, and British Columbia to see what these special allocations look like as vertical equity measures. Because stronger measures are needed if educational equality of opportunity is the goal, measuring how strong vertical equity efforts are is a highly relevant topic. The data were obtained from ministries of education. The data were analyzed and compared to understand the similarities and differences in their equity measures. The results indicate that although Ontario provides the least in the pupil foundation allocation, it provides more assistance through two allocations: the ESL allocation and the allocation for low socioeconomic status students. The possible implications of the differences in the foundation allocation and the special allocations are discussed.

L'objectif de cette étude était de comparer l'attribution de base et trois attributions spéciales pour les élèves en difficulté, les élèves en ALS et les élèves de bas statut socio-économique en Ontario, Alberta et Colombie britannique pour évaluer ces attributions spéciales en tant que mesures d'équité verticale. Pour arriver à l'égalité des chances en éducation, des mesures plus vigoureuses sont nécessaires; l'étude de la force des efforts d'équité verticale constitue donc un sujet tout à fait pertinent. Les données ont été obtenues de départements d'éducation, et ensuite analysées et comparées pour comprendre les similarités et les différences entre leurs mesures d'équité. Les résultats indiquent que même si l'Ontario fournit le moins en attribution de base aux élèves, cette province fournit le plus d'appui avec deux attributions spéciales : l'attribution pour les élèves en ALS et celle pour les élèves de bas statut socio-économique. Nous discutons des répercussions possibles découlant des différences entre les attributions de fond et les attributions spéciales.

Introduction

This study compares the elementary education funding formulae in three Canadian provinces—Ontario, Alberta, and British Columbia—with a focus on vertical equity from the students' perspective. The similarities and differences, particularly those measures related to assisting disadvantaged students, of the three formulae are analyzed and their possible implications are explored. With increasingly diverse students in schools, it is important to understand how equity measures in provincial funding formulae work to meet the needs of all students. Of the seven provinces that determine education funding provincially, these three were selected because they have funding formulae that are the most similar (Alberta Education, 2006; British Columbia Ministry of Education, 2006; Ontario Ministry of Education, 2006a, 2006b).

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Literature Review

The two most important issues in education finance are adequacy and equity. Both will continue to be an important part of policy and action agendas (Guthrie, 2006). With regard to equity, various measurements have been used, but the two most commonly discussed concepts are horizontal equity and vertical equity. The principle of horizontal equity suggests that governments should treat equals equally. The criterion of vertical equity refers to the determination of how to treat persons with varying levels of well-being fairly (Boadway & Kitchen, 1999), or how to treat unequals unequally.

Horizontal equity as applied to education finance from the students' perspective means that all students with similar learning needs are treated equally regardless of their family status and wealth. Vertical equity, on the other hand, means that students with diverse learning needs are treated variably such that they are able to achieve equal educational outcomes (Baker & Green, 2008). Because treating all students with similar needs the same is much easier than looking at students with diverse needs, measuring how diverse their needs are, and deciding how much assistance is needed to help disadvantaged students to achieve the required learning outcomes, efforts to establish a method of vertical equity for students are more difficult than those needed for horizontal equity (Garner, 2004).

Brimley and Garfield (2005) state that if the funding gap between expenditures per pupil in high-poverty districts and low-poverty districts is smaller than 10%, then equity is within acceptable limits. Measured by this standard, theoretically, seven provinces' elementary and secondary education funding can be considered equitable. These seven provinces are Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Alberta, and British Columbia. They determine their education funding provincially according to student enrollment, student characteristics, and school board characteristics, regardless of the difference in local wealth. The other three provinces determine their funding both locally and provincially. These three provinces are Quebec, Manitoba, and Saskatchewan, but in their provincial portion of funding there is always an equalizing grant to reduce the variations among school jurisdictions caused by local differences in wealth.

Equity in general means fairness. It does not necessarily mean everything always absolutely equal. In terms of horizontal equity, it seems that Ontario is already equitable in funding education, because all 72 school boards in the province are funded according to the same formula based on student enrollment, student characteristics, and school board characteristics. Fiscal neutrality has been achieved, at least from the provincial perspective. The fiscal neutrality standard requires that there be no relationship between educational spending per pupil and local property wealth per pupil (Odden & Picus, 2008).

According to the formula, in 2006-2007 every student received the same pupil foundation allocation. In addition, 13 other allocations were determined by the provincial government based on diverse school boards and students' characteristics. Of these 13 allocations, one was a provincial initiative to reduce class sizes, eight were distributed based on boards' characteristics, one was for adult education, and three were based on students' characteristics (Ontario Ministry of Education, 2006a).

School boards receive revenues from both the provincial government and their own municipal governments. However, municipal governments across Ontario provide the same percentage of their income to boards. This percentage is decided by the provincial finance minister; according to the funding formula, the balance is provided by the provincial government. In 2006-2007 across the province, municipal property taxes accounted for about 36% of the funding for elementary and secondary education (L. Lowe, Ontario Ministry of Education, personal communication, April 8, 2008).

In Alberta the situation is somewhat similar. Funding for elementary and secondary education is provided from the provincial Alberta School Foundation Fund based on the number of eligible students, and local wealth has no effect on how much money school jurisdictions—called divisions or districts—receive from the Alberta School Foundation Fund. All revenues from property taxes for education are now deposited in the Alberta School Foundation Fund (Alberta Education, 2006). School divisions in Alberta receive the same amount of base funding for each eligible student in addition to other allocations to meet students and school divisions' particular needs.

In British Columbia a funding allocation system determines the general operating grants using individual district enrollments and specific factors that apply to each school district (British Columbia Ministry of Education, 2006). Every school district is funded with the same system, and local wealth has no effect on how much funding the school districts receive from the province. In addition to the basic enrollment-based funding, there is supplementary funding for unique student and district needs.

It seems that these three provinces have achieved horizontal equity at the provincial level, but what about vertical equity? As financial structures enable school jurisdictions to provide various educational services to students with special needs, vertical equity has emerged as a strong concern (King, Swanson, & Sweetland, 2003). Vertical equity is harder to achieve, because it is difficult for people to agree on what diverse needs students have and how much assistance disadvantaged students require to achieve the expected learning outcomes. It costs more to educate students with disabilities, students from low-income families, and students from families where English is not their first language (Imazeki & Reschovsky, 2006). One role of educational policy is to intervene in situations where inequities exist and facilitate improvements that better serve the democratic principles of access and enhanced life opportunities (Rodriguez & Rolle, 2007).

"It is not enough to simply have equity of expenditures and inputs; it is equally (and perhaps more) important to focus on equity of outcomes for all students" (Plecki, 2006, p. 170). To ensure equity of outcomes for all students, more support must be provided for some students. The special needs of children less prepared for school must be taken into greater account by school funding formulae (Wilson, Lambright, & Smeeding, 2006). Policymakers in Ontario, Alberta, and British Columbia recognize that it costs more to educate some students than others to achieve the expected learning outcomes, and all three provinces have vertical equity measures in their funding formulae to provide assistance to students with challenging learning conditions. Because

the assistance is there, the question then is how much and for how long the assistance is provided.

Conceptual Framework

There is a shift from input equity to outcome equity in school finance (Baker & Green, 2008). However, the relationship between resources and outcomes is contentious, and the implications for the funding of schools are not straightforward (Belfield & Levin, 2002). No one has determined exactly how unequally those students with unequal needs should be treated (Brimley & Garfield, 2005; Paquette, 2004). Because "stronger measures are needed if educational equality of opportunity is the goal" (Wilson et al., 2006, p. 420), measuring how strong vertical equity efforts are is a highly relevant topic. It is useful to examine differences in funding mechanism components across jurisdictions with an emphasis on how they encourage equity (Neu, Peters, & Taylor, 2002).

Method

In this study, a comparison was made of the foundation allocation and three special allocations: the allocation for special needs students, for ESL students, and for students from low socioeconomic-status families. These three allocations were selected because they are the three most commonly considered equal-opportunity grants (Thompson, Wood, & Crampton, 2008; Wilson et al., 2006). In addition, among all the special allocations, these three are distributed entirely according to student characteristics.

The foundation allocation and three special allocations for disadvantaged students in grades 1-8 for 2006-2007 were compared to find out the general funding situation in the three provinces and what their vertical equity measures looked like. These grades were selected because the relevant information was obtainable. In addition, there are differences among the three formulae. In Ontario, funding for students in grades 1-8 is the same, but students in grades 9-12 receive more funds. In Alberta, funding for students in grades 1-9 is the same, but students in grades 10-12 have their funding calculated differently. In British Columbia, there is no difference for elementary and secondary students in the basic enrollment-based funding. Including secondary students in this comparison would make the study far more complicated.

I went to the Web sites of the three ministries of education and contacted their personnel responsible for school funding information to collect the relevant data. Once the data were obtained, I analyzed them to understand their similarities and differences and explored their possible implications. It is difficult to compare education systems between provinces as each province uses its own terminology in its funding formula. I have made the best attempt at addressing these differences by presenting the similar points as parallel as possible.

Comparison and Results

Foundation Allocation

In 2006-2007 the Ontario pupil foundation allocation was \$3,744 for each student in grades 1-8 (Ontario Ministry of Education, 2006a). In Alberta, the base funding was \$5,291 for each student in the same grades (Alberta Education, 2006). In British Columbia, the basic funding was \$5,830 for each student (British Columbia Ministry of Education, 2006). Clearly Alberta (\$5,291) and

British Columbia (\$5,830) provided more base funding than did Ontario in the pupil foundation allocation (\$3,744).

Special Education Allocation

The first comparison of special allocations is on the funding of special needs students. In Ontario, there was an enrollment-based special education amount (SEA) of \$623 per pupil in 2006-2007, counting all students from grades 1-3. This amount was \$470 per pupil in grades 4-8.

In addition to SEA, the province provided special-needs students with extra funding at four levels. The first level was the special equipment claim (SEC). The average elementary SEC approved by the Ministry of Education was \$6,608 (J. Lewis, Ontario Ministry of Education, personal communication, May 16, 2008).

The second level was high needs amount (HNA). The average high needs amount was \$559 for each elementary pupil, counting all students (L. Lowe, Ontario Ministry of Education, personal communication, April 8, 2008). The third level was special incidence claim (SIC). A board received on average \$20,862 for each elementary claim approved by the Ministry of Education (my calculation based on information provided by J. Lewis from the Ontario Ministry of Education, personal communication, May 16, 2008).

The highest level was the facilities amount (FA) for each qualifying education program provided by a school board under an agreement with a facility. These facilities included psychiatric facilities, hospitals, and correctional institutions. In addition to the salaries and benefits for teachers and teacher assistants providing programs in a facility, for each teacher there was \$2,666 and for each teacher assistant \$1,302. There was also a furniture amount, with the maximum being \$3,523 (Ontario Ministry of Education, 2006a). A board received on average \$15,359 for each elementary facilities amount approved by the Ministry of Education in 2006-2007 (my calculation based on information provided by J. Lewis, Ontario Ministry of Education, personal communication, May 16, 2008). The actual average facilities amount was lower than the average special incidence claim, because some facilities amounts were for the whole school year, but others were for summer only.

The legislative grants for the 2006-2007 school board fiscal year, section 43, subsection 1, stipulates that "a district school board shall ensure that the amount it spends in the fiscal year on special education for pupils of the board is not less than the amount of the board's special education allocation for the fiscal year." Subsection 2 states that if a board's net expenditure on special education is less than the amount required, "the board shall place the difference in the board's special education reserve fund" (Ontario Ministry of Education, 2006a). There have been times when the special education allocation arrived at boards too late to be spent in the intended fiscal year.

In 2006-2007 Alberta provided students with special needs with two levels of extra support. School divisions received extra funding of \$2,241 for each child with mild or moderate disabilities in an early childhood service; this funding would be provided for a maximum of two years. School divisions received extra funding of \$15,751 for each student with severe disabilities (Alberta Education, 2006).

British Columbia provided supplementary funding to special-needs students at three levels in 2006-2007. School boards received \$32,000 for each level one full-time equivalent (FTE) student, \$16,000 for each level two FTE student, and \$8,000 for each level three FTE student (British Columbia Ministry of Education, 2006).

Ontario provided extra funding of \$6,608 for each SEC, \$559 per pupil in the HNA, \$20,862 for each SIC, and \$15,359 for each FA. This was in addition to SEA of \$623 per pupil from grade 1 to grade 3, and \$470 in grades 4-8. Alberta provided extra funding of \$2,241 for each child with mild or moderate disabilities in an early childhood service for a maximum of two years and \$15,292 for each student with severe disabilities. British Columbia provided supplementary funding of \$8,000 for each level three special needs student, \$16,000 for each level two student and \$32,000 for each level one student. If we compare the funding for special needs students, it appears that British Columbia and Ontario provided more assistance. There was another difference: Ontario's legislative grants stipulated that the special education allocation could be used only for special education, whereas in Alberta and British Columbia there was no such specification.

ESL Allocation

Over the past decade, on average more than 200,000 immigrants have entered Canada yearly (Citizenship and Immigration Canada, 2008). Among recent immigrants the number of native English-speakers has been declining over the past 25 years (Citizenship and Immigration Canada, 2005). Most immigrants entering Canada today do not speak English as their first language. Canada received 251,649 immigrants in 2006 (Citizenship and Immigration Canada, 2007). Among these immigrants about one fifth were school-aged children between the ages of 4 and 18. These immigrants who did not speak English at home needed assistance in school to catch up academically with their Canadian-born peers. According to Cummins's (2000) research, at least five years is typically required for students who do not speak English as their native tongue to catch up academically with their peers.

In 2006 Ontario received 125,914 immigrants, Alberta was the destination of 20,717 immigrants, and British Columbia received 42,079 immigrants (Citizenship and Immigration Canada, 2007). In 2006-2007 all three provinces provided assistance to immigrant children who were considered English-as-a-second-language (ESL) students, but there were differences in the assistance. Ontario provided assistance to ESL students for four years. School boards received \$3,349 for each ESL student who was in the Ontario school system for the first time. Boards received 70% of that amount for each ESL student in the system for the second year. They received 50% of the amount for each ESL student for the third year, and 25% of the amount for each ESL student for the fourth year. If one totaled the 2006-2007 ESL funding for four years, the result would be \$8,205 for each ESL student in four years. In addition to the above ESL allocation, an ESL amount was calculated based on Statistics Canada data on the number of children in each board whose language spoken most often at home was not English (Ontario Ministry of Education, 2006a).

Alberta provides assistance to ESL students usually for three years, to a maximum of seven. The annual ESL amount was \$1,061 per eligible student in

2006-2007. That year from early childhood services to grade 12 the total number of ESL-funded students was 41,741. Of these 41,741 students, 11,451 (27%) were in their fourth year of ESL funding, 9,534 (23%) were in their fifth year, 5,391 (13%) were in their sixth year, and 4,640 (11%) were in their seventh year of ESL funding (B. Smith, Alberta Ministry of Education, personal communication, March 18, 2008). If a student was entitled to ESL funding for seven years, the school division would receive at most \$7,427 for that student in seven years.

British Columbia provided \$1,100 for each ESL student in 2006-2007. This supplementary funding would be provided for a maximum of five years, which would amount to \$5,500 in five years (British Columbia Ministry of Education, 2006).

It is obvious that Ontario (more than \$8,205) would provide more funding for each ESL student than Alberta (at most \$7,427) and British Columbia (at most \$5,500). Note also that the gradually decreasing funding for four years in Ontario may be considered more appropriate than the flat rate for three, four, five, six, or even seven years in Alberta and five years in British Columbia. It is reasonable to expect that as ESL students continue their studies, their English improves and less language support is required.

Low Socioeconomic Status Allocation

Ontario and Alberta provide extra funding for students from low socioeconomic-status (SES) families, but British Columbia does not provide supplementary funding to this group of students. Both Ontario and Alberta use Statistics Canada's low-income cut-off, low parent education, and lone-parent information in determining the assistance to low SES students (Alberta Education, 2006; Ontario Ministry of Education, 2006a, 2006b). In Ontario, recent immigration status is another factor considered, because Ontario receives more immigrants than any other province, and most immigrants tend to have low-income jobs (Statistics Canada, 2007a).

In Ontario the extra funding is called the *learning opportunities allocation*. Calculations for this allocation are extremely complicated. It is impossible to calculate on average how much school boards receive for each student from a low SES family, because no such data exist. The learning opportunities allocation is provided mainly according to a demographic amount and a demographic factor. Both are calculated based on Statistics Canada's low-income cut-off, low parent education, lone-parent status, and immigration status information in areas covered by corresponding school boards. In 2006-2007 the demographic factor among school boards varied between 0.3807 and 0.0003. The higher the demographic factor, proportionately the greater a learning opportunities allocation a school board received. However, the determination of the allocation also considered other factors such as literacy and numeracy assistance and student success.

Alberta also provides school divisions with money to help them assist students from low SES families. This funding is provided according to an SES incidence rate. In 2006-2007 the SES incidence rate among school divisions varied between 1 and 0.128. The higher the incidence rate, the more a school division received from this particular funding. If a school division's incidence rate was 1, the division received \$424 extra for each student. If a division's

incidence rate was 0.5 the division received half of that amount. If a division's incidence rate were 0, it would receive nothing extra.

To compare how much assistance each province provided, I examined the demographic factor of the 72 school boards in Ontario, calculated the average demographic factor, and took out 11 boards that had an above-average demographic factor. Because the higher the demographic factor, the more a board received from the learning opportunities allocation, I considered these 11 boards to have received extra assistance from that allocation. I divided the allocation these 11 boards received for 2006-2007 by their enrollment. On average, these 11 boards received \$285 extra per student from the learning opportunities allocation (Ontario Ministry of Education, 2006a, 2007b).

Turning to Alberta, I examined the low SES incidence rate among the 76 school divisions and calculated the provincial average. I then took out 21 divisions that had a higher-than-average incidence rate. Because the higher the rate, the more a division received from the SES funding, I considered these 21 divisions to have received extra assistance according to the funding manual. I calculated the average incidence rate for these 21 divisions. The average incidence rate of the 21 divisions was then multiplied by the SES funding rate of \$424. On average, these 21 divisions received about \$125 extra per student (Alberta Education, 2006).

On average, the 11 Ontario boards with an above-average demographic factor received \$285 extra per student from the learning opportunities allocation. On average, the 21 Alberta divisions with an above-average SES incidence rate received about \$125 extra per student from the SES funding. Either Ontario had a higher incidence rate of low SES students or on average, Ontario provided more funding to each student of low SES. It is difficult to determine which is the case, because there are no statistics indicating the number of students of low SES in each province. In either event, proportionately Ontario provided more funding to students of low SES in 2006-2007.

Summary

In 2006-2007 Alberta and British Columbia provided its students in grades 1-8 with base funding of \$5,291 and basic funding of \$5,830, respectively: more than the \$3,744 Ontario provided through its pupil foundation allocation. However, when it came to providing assistance to students with three selected disadvantages, the story was different. It seems that Ontario and British Columbia provided more assistance for special education students. For each ESL student, Ontario would provide more than \$8,205 on a sliding scale over four years. By contrast, Alberta provided \$1,061 per year for each ESL student often for three years, with some for seven years amounting to at most \$7,427. British Columbia would provide each ESL student with \$1,100 per year for a maximum of five years, which would amount to \$5,500. Clearly Ontario provided more assistance to ESL students. Ontario also provided more assistance (\$285) than Alberta (\$125) in jurisdictions with more than average low-SES families. Table 1 displays the comparison results for 2006-2007.

In summary, in the pupil foundation allocation, Ontario provided less than Alberta and British Columbia. It seems that Ontario and British Columbia provided more assistance than Alberta in special education allocation. Ontario

Table 1
Comparison Results

	<i>Foundation</i>	<i>Special education</i>	<i>SES</i>	<i>ESL</i>	
Ontario	\$3,744	SEC HNA SIC FA + SEA \$623/pupil, grades 1-3 \$470/pupil, grades 4-8 Only used for special ed.	\$6,608 \$559/pupil \$20,862 \$15,359	\$285/pupil	\$8,205 in 4 years + ESL amount
Alberta	\$5,291	Mild/moderate disabilities maximum 2 years; Severe disabilities	\$2,241 \$15,292	\$125/pupil	at most \$7,427 in 7 years
British Columbia	\$5,830	level 3 level 2 level 1	\$8,000 \$16,000 \$32,000	no	at most \$5,500 in 5 years

Sources: Alberta Education, 2006; British Columbia Ministry of Education, 2006; J. Lewis, personal communication, May 16, 2008; Ontario Ministry of Education, 2006a, 2006b, 2007a; B. Smith, personal communication, March 18, 2008.

and Alberta provided an SES allocation, but British Columbia did not. Ontario and Alberta gave more assistance than British Columbia in ESL allocation.

Discussion and Conclusion

Discussion

According to the 2006 Program for International Student Assessment (PISA), Alberta 15-year-olds are Canada's top-performing students (Bussiere, Knighton, & Pennock, 2007). This study has found that in 2006-2007, for grades 1-8, school jurisdictions in Alberta received more base funding than those in Ontario. Other things being equal, money matters (Odden & Picus, 2008). Money "is linked to student achievement in a complex-although poorly understood-fashion. It is at least linked in that less money buys less instruction" (Thompson et al., 2008, p. 93). Is there a relationship between Alberta students' better performance than those of Ontario and Alberta's more generous base funding?

This study compares the vertical equity measures that Ontario, Alberta, and British Columbia have for meeting the needs of disadvantaged students. The findings indicate that in 2006-2007, Ontario and Alberta provided more assistance than British Columbia in two categories, low SES allocation and ESL allocation, to bring equal learning opportunities to disadvantaged students. The PISA 2006 report indicates that socioeconomic status has a stronger influence on student performance in British Columbia than in Alberta and Ontario (Bussiere et al., 2007). Does this have anything to do with the fact that Ontario and Alberta provided more assistance than British Columbia to ESL

students and no socioeconomic status allocation was provided in British Columbia? With so many variables affecting students' learning outcomes, more comprehensive research needs to be conducted to test the findings of this study and to determine whether differences in special allocations play a role in students' performance.

Before the current funding formula was introduced in 1998, Ontario's elementary and secondary education funding model was a guaranteed tax-base grant plan in which local municipalities and the provincial government determined revenues for school boards (Lawton, 1996). Under that plan the grants from the provincial government had an equalizing effect; but there were significant differences in funding per pupil among diverse school boards owing to variations in wealth among municipalities. Since 1998, after the reform by the Conservative government of the day, education has been funded entirely according to a provincial formula under which the provincial government calculates how much funding each school board needs based on student enrollment characteristics and board characteristics.

Alberta's current funding formula was introduced in 1994, when the property tax was provincialized and deposited in the Alberta School Foundation Fund (Neu & Taylor, 2000). The funding system is based on a weighted-pupil model: an equal amount of base funding per eligible pupil from the Alberta School Foundation Fund is calculated, and all school divisions receive the same amount per eligible student. School divisions receive extra funding for special-needs students, ESL students, and socioeconomically disadvantaged students, all according to a weighting system. The British Columbia funding system has been in existence in the current format since 2002-2003 (British Columbia Ministry of Education, 2002).

It is worth noting that generally speaking, funding for elementary and secondary education in Canada is more equitable than that in the United States, where there are still significant variations among school districts in each state. "The conflict in school finance is that equity in providing equal dollars per student has still not been attained in most states" (Brimley & Garfield, 2005, p. 64). It has been recommended that states play a greater role in funding education, but resistance is strong.

When the current funding formula was introduced in Ontario, there was also strong resistance. People who disagreed with the Conservative government saw at least three problems with the formula being implemented. First, overall funding to education was reduced. Second, one funding formula could not fit all school boards. Third, local autonomy was lost, which was undemocratic. The current Liberal government, formed in October 2003, has invested more in education. According to my calculation, it added \$2.85 billion to elementary and secondary education from 2003-2004 to 2006-2007—an increase of about 15%—even though enrollment dropped approximately 1.6% from 2003-2004 to 2006-2007 (Ontario Ministry of Education, 2007b). The consumer price index for Ontario indicates an increase of 11% from 2002 to August 2007 (Statistics Canada, 2007b), which is the closest matching period I can find. Simply put, there was more money for each student in 2006-2007 than in 2003-2004, with inflation considered. People in Ontario still debate whether the funding is adequate and whether one size can fit all, but there is less protest

about lost local autonomy. It seems that no one can have both: local autonomy and funding equity across a province.

It is difficult to judge whether vertical equity has been achieved in the three provinces, because there is no consensus on what can be considered as vertically equitable, but it is obvious that efforts have been made in all three provinces to achieve it by providing extra funding to students with challenging conditions. It may also be stated that Ontario is doing more in two vertical equity categories: ESL allocation and low-SES allocation, although it provides the least in the foundation allocation. The 2008-2009 funding in the three provinces continues to use the formulae analyzed here. It is probably safe to say that this article describes patterns in providing assistance to disadvantaged students in the three provinces since 1998, 1994, and 2002 respectively.

The issue of the strictness of student eligibility for special allocations is not dealt with in this study. The degree of assistance depends not only on the dollar amount, but also on how students are classified. This is a limitation of the study. Future research needs to be conducted to make a more detailed comparison on this matter. Future research may also be conducted on establishing a clearer definition of vertical equity that can be accepted by most theorists, practitioners, and policymakers. Is it possible to provide an answer to the question How unequal is unequal enough?

Conclusion

In 2007-2008 and 2008-2009, Ontario, Alberta, and British Columbia used the same funding formulae as in 2006-2007 with minor revisions (Alberta Education, 2007, 2008; British Columbia Ministry of Education, 2007, 2008; Ontario Ministry of Education, 2007, 2008). Because Ontario seems to provide more assistance to disadvantaged students, can we say that the Ontario funding formula is more vertically equitable? The answer depends on how strong we believe vertical equity measures should be. Given the gap in performance between average students and disadvantaged ones in Canada (Willms, 2005), Canadians need stronger vertical equity measures. Actually, PISA 2006 results do indicate that immigrant status, parents' education, and socioeconomic background are all related to student performance in Canada (Bussiere et al., 2007). Under the current circumstances, would it be more vertically equitable to provide more assistance to disadvantaged students? If it is more equitable to provide more assistance to disadvantaged students for the purpose of narrowing the gap in performance, then the Ontario funding formula may be considered more equitable.

This study provides a useful preliminary analysis of the vertical equity measures in elementary education funding in three provinces. The findings indicate that although Ontario provides the least in the pupil foundation allocation, it provides more assistance to disadvantaged students with two grants: the ESL allocation and the low SES allocation. The findings from this study may help policymakers in the three provinces think about possible ways to improve their funding mechanisms to serve all students and provide strong support to disadvantaged students. The results from the study may also assist school board administrators, parents, and the general public in having a clearer understanding of their vertical equity measures and make them think about the possible implications of these measures.

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