

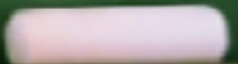


# BACKGROUND

FRONTIER CENTRE FOR PUBLIC POLICY & AIMS • BACKGROUND NO. 119 • FEBRUARY 2014



A B C



## The Cost Disease Infects Public Education Across Canada

Rodney A. Clifton

PRODUCED BY



IN PARTNERSHIP WITH

**FRONTIER CENTRE  
FOR PUBLIC POLICY**

Winnipeg, Manitoba



# AIMS

## Atlantic Institute for Market Studies

Suite 204, Park West Centre, 287 Lacewood Dr., Halifax, Nova Scotia, B3M 3Y7  
 Telephone: 902-429-1143; Fax: 902-425-1393  
 E-mail: aims@aims.ca - Website: www.aims.ca

The Atlantic Institute for Market Studies (AIMS) is an independent, non-partisan, social and economic policy think tank based in Halifax. The Institute was founded by a group of Atlantic Canadians to broaden the debate about the realistic options available to build our economy.

AIMS was incorporated as a non-profit corporation under Part II of the *Canada Corporations Act* and was granted charitable registration by Revenue Canada as of October 3, 1994; it received US charitable recognition under 501(c)(3) effective the same date.

The Institute's chief objectives include:

- a) initiating and conducting research identifying current and emerging economic and public policy issues facing Atlantic Canadians and Canadians more generally, including research into the economic and social characteristics and potentials of Atlantic Canada and its four constituent provinces;
- b) investigating and analyzing the full range of options for public and private sector responses to the issues identified and acting as a catalyst for informed debate on those options, with a particular focus on strategies for overcoming Atlantic Canada's economic challenges in terms of regional disparities;
- c) communicating the conclusions of its research to a regional and national audience in a clear, non-partisan way; and,
- d) sponsoring or organizing conferences, meetings, seminars, lectures, training programs, and publications, using all media of communication (including, without restriction, the electronic media) for the purpose of achieving these objectives.



MB: 203-2727 Portage Avenue,  
 Winnipeg, Manitoba Canada R3J 0R2  
 Tel: 204-957-1567  
 Email: manitoba@fcpp.org

SK: 2353 McIntyre Street,  
 Regina, Saskatchewan Canada S4P 2S3  
 Tel: 306-352-2915  
 Email: saskatchewan@fcpp.org

AB: Ste. 603, 734-7th Avenue SW,  
 Calgary, Alberta Canada T2P 3P8  
 Tel: 587-930-2289  
 Email: alberta@fcpp.org

The Frontier Centre for Public Policy is an independent, non-profit organization that undertakes research and education in support of economic growth and social outcomes that will enhance the quality of life in our communities. Through a variety of publications and public forums, the Centre explores policy innovations required to make the prairies region a winner in the open economy. It also provides new insights into solving important issues facing our cities, towns and provinces. These include improving the performance of public expenditures in important areas such as local government, education, health and social policy. The author of this Backgrounder study has worked independently and the opinions expressed are therefore their own, and do not necessarily reflect the opinions of the board of the Frontier Centre for Public Policy.

Copyright © MMXIV by the Frontier Centre for Public Policy.

Date of First Issue: February 2014.

Reproduced here with permission of the author. Any errors or omissions and the accuracy and completeness of this paper remain the responsibility of the author.

ISSN 1491-78

*I*deas for a better tomorrow

# Executive Summary

- Professor William Baumol coined the term “the cost disease” to indicate that the cost of consumer products has increased at the rate of the Consumer Price Index (CPI), while the cost of education and health care have increased at an exponential rate.
- From 1999-00 to 2010-11, for example, enrollment in Canadian public schools decreased by 6.8 per cent, the number of educators increased by 8.0 per cent, and expenditures increased by about 60 per cent from slightly over \$37.3-billion to almost \$59.2-billion.
- If the public education expenditures increased at the same rate as the increase in CPI, it would be \$46.8-billion and in 2010-11 the savings would be around \$12.4-billion, or 21 per cent.
- Parent-controlled funding (vouchers) would increase competition among schools and improve the education of students.
- In addition, schools would concentrate on objective, measurable, outputs—those that are essential for ensuring that students are informed, enlightened, and employable.
- Excellent schools would attract more students and low-performing schools would wither and close.
- Considerable money would be saved as schools become more efficient and more responsive to the needs of students, parents, and taxpayers.

**“...the cost of consumer products has increased at the rate of the Consumer Price Index (CPI), while the cost of education and health care have increased at an exponential rate.**

## Introduction

**The [cost] disease has, over the last two decades, spread like a virus through all the social services delivered by governments, particularly education and health care.**

William Baumol, professor emeritus of economics at Princeton University, is the author of *The Cost Disease: Why Computers get Cheaper and Health Care Doesn't*.<sup>1</sup> The “cost disease” is a term Professor Baumol coined in the 1960s, but more recently it has become known as “Baumol’s disease” or “Baumol’s curse” for a very good reason.<sup>2</sup> The disease has, over the last two decades, spread like a virus through all the social services delivered by governments, particularly education and health care.<sup>3</sup>

Building on over 40 years of economics research, Professor Baumol has shown that while the cost of consumer products, such as automobiles and computers, has increased at a certain rate—a rate that is incorporated into the Consumer Price Index (CPI)—the cost of social services, such as education and health care, has increased at a much faster rate. Professor Baumol says that these social services are “condemned” to increase faster than inflation because the number of people providing and using the services continue to expand and they cannot be easily reduced.

In fact, the empirical evidence from a number of countries shows that increases in the cost of education represent an exponential growth curve, rising much faster than the CPI, which means that the increases are unsustainable over the long term.<sup>4</sup> Particularly with an aging population and stagnant or decreasing productivity, provincial and territorial governments in Canada will be forced to slow the increasing cost of public education.<sup>5</sup>

This backgrounder examines the costs of public education in the provinces and territories from 1999 to 2011, showing that the cost disease has, in fact, infected public education, but at different rates. Thus, provincial and territorial governments with more expensive public educational systems can learn from those with less expensive systems.

# Methods

The data for this report have been obtained from Statistics Canada<sup>6</sup>, which obtained it from the departments of education in the 13 provinces and territories.

**Public School Enrollment** is the Full-Time Equivalent (FTE) enrollment of students in public schools in each province and territory. Students enrolled in youth detention facilities, funded by provincial and territorial governments, are also included. The information was obtained in September of each year.

The FTE enrollment is the number of full-time students plus the part-time students according to the fraction of the school year in which they are registered. Students enrolled in kindergarten programs for half a day in a 10-month school year are counted as 0.5 FTEs. Likewise, full-time students who are enrolled for 2 months of a school year are counted as 0.2 FTEs.

**Public School Educators** are the number of full-time educators on September 30 plus the part-time educators according to the percentage of their full-time employment allocation. Educators who have been employed full-time for five months are counted as 0.5 FTEs.

Educators include teachers, school administrators, and pedagogical support staff. Teachers are those involved in direct instruction, but exclude teachers' aides. School administrators are those involved in the direct management of schools such as principals and vice-principals, but exclude higher level management such as superintendents and directors of education. Pedagogical support personnel are non-teaching employees such as guidance counselors, librarians, and educational media specialists, but exclude health and social support personnel. Finally, educators in youth detention schools funded by provincial and territorial governments are included, but educators in schools funded by federal departments, such as the departments of National Defense and Aboriginal Affairs and Northern Development, are excluded.

**Students/Educator Ratio** is the FTE student enrollment divided by the FTE educators for each of the provinces and territories and for each year. These ratios have been calculated by the author.

**Total Expenditures** includes both operational and capital expenditures in each of the provinces and territories for each year. Over this period, the operational expenditures represented between 77 per cent and 90 per cent of the total expenditures, but the rate varies by year and province or territory.

**Expenditures per Student** is the total expenditures divided by the Full-Time Equivalent student enrollment for each province and territory for each of the 11-years. These expenditures have been calculated by the author.

# Results

Table 1, 'Selected Educational Statistics for Provinces and Territories', presents data for public schools in all provinces and territories from 1999-00 to 2010-11, an 11-year period. Over this time, the Canadian public school enrollment dropped from slightly over 5-million to slightly under 4.8-million students (-341,793 students or -6.8 per cent), while the number of educators increased from 315,549 to 340,901 (+25,352 or +8.0 per cent). At the same time, total expenditures increased from slightly over \$37.3 billion to almost \$59.2-billion, an increase of almost 60 per cent.

Education is, of course, a provincial and territorial responsibility, so these figures gloss over differences between jurisdictions. For example, enrollment in British Columbia decreased by 9.7 per cent, while the number of educators decreased by 8.4 per cent; enrollment in Manitoba also decreased by 9.7 per cent, but the number of educators increased by 3.1 per cent. Likewise, public school enrollment in Saskatchewan decreased by 13.2 per cent, while the number of educators increased by 5.8 per cent. In Alberta, on the other hand, public school enrollment increased by 4.2 per cent, but the number of educators increased by three times that rate, 12.6 per cent. Surprisingly, Alberta is the only jurisdiction where the number of students increased over this 11-year period, but it is not the only jurisdiction in which the number of educators increased.

At the other side of the country, in Nova Scotia, the number of students decreased by 19 per cent and the number of educators increased by 3.7 per cent.<sup>6</sup> In New Brunswick, the number of students decreased by 17.8 per cent and the number of educators increased but only by 1.5 per cent. However, in Newfoundland and Labrador, the number of students decreased by 27.3 per cent, and the number of educators also decreased, but only by 12.6 per cent.

The fourth column (and Chart 1, page 14) illustrates changes in the students/educator ratios for each year and each province and territory. In every jurisdiction, the ratio decreased, but there are substantial differences. For example, the ratio decreased from 17.14 students per educator to 15.86 in Alberta, from 15.66 to 13.71 in Manitoba, and from 16.55 to 13.57 in Saskatchewan. The highest students/educator ratio is in British Columbia where there are almost 17 students per educator, and the lowest ratio is in the Yukon where there are approximately 10 students per educator in 2009-10, the last year for which data are available.

The differences between provinces and territories seem quite small, but they represent large differences in expenditures as illustrated in the cost per student as reported in the last column (and Chart 2, page 14). In 2010-11 the cost per student ranged from a low of \$11,306 in Prince Edward Island to a high of \$22,202 in the Northwest Territories. Moreover, over the 11-year period the increases in expenditures per student ranged from a low of 53.3 per cent in British Columbia to a high of 111.1 per cent in Newfoundland and Labrador. The increase is 95.3 per cent in Saskatchewan, 89 per cent in Alberta, 77.4 per cent in Manitoba, and 69 per cent in Ontario. In comparison, the Consumer Price Index (CPI) increased by 25.5 per cent over the same time period.<sup>7</sup> As expected from Baumol's theory,<sup>8</sup> the cost of educating the average student in public

schools increased by between two and four times faster than the increase in the CPI in the provinces and territories.

**TABLE 1**

## Selected Educational Statistics for Provinces and Territories: 1999 – 2011

### Alberta



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	528,099	30,797	17.14	3674.9	6,959
2000-01	531,165	29,106	18.25	4006.4	7,543
2004-05	532,063	36,911	14.41	5048.7	9,489
2005-06	532,876	37,570	14.18	5485.0	10,293
2009-10	545,819	34,759	15.70	7112.6	13,031
2010-11	550,059	34,675	15.86	7235.5	13,154
Increase/Decrease	4.2%	12.6%	--	96.9%	89.0%

### British Columbia



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	609,078	35,687	17.06	4692.2	7,704
2000-01	606,590	36,113	16.80	4807.2	7,925
2004-05	580,596	33,146	17.52	5252.9	9,047
2005-06	574,434	33,701	17.05	5628.3	9,798
2009-10	547,995	33,054	16.58	6478.9	11,823
2010-11	550,038	32,694	16.82	6507.8	11,832
Increase/Decrease	-9.7%	-8.4%	--	38.7%	53.3%

TABLE 1

## Selected Educational Statistics for Provinces and Territories: 1999 – 2011

### Manitoba



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (nominal dollars)
1999-00	190,185	12,147	15.66	1410.0	7,414
2000-01	183,141	12,224	14.98	1467.5	8,013
2004-05	178,256	12,245	14.56	1676.6	9,406
2005-06	176,350	12,278	14.36	1771.9	10,048
2009-10	171,518	12,492	13.73	2234.3	13,027
2010-11	171,654	12,518	13.71	2257.2	13,150
Increase/Decrease	-9.7%	3.1%	--	60.0%	77.4%

### New Brunswick



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	127,003	7,571	16.77	894.2	7,041
2000-01	124,942	7,468	16.73	841.2	6,733
2004-05	117,145	7,371	15.89	1013.6	8,653
2005-06	114,820	7,385	15.55	1055.6	9,193
2009-10	106,394	7,881	13.50	1241.7	11,671
2010-11	104,421	7,686	13.59	1273.8	12,199
Increase/Decrease	-17.8%	1.5%	--	42.5%	73.3%



TABLE 1

## Selected Educational Statistics for Provinces and Territories: 1999 – 2011

### Newfoundland and Labrador



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	91,203	6,451	14.14	559.5	6,135
2000-01	87,550	6,374	13.74	551.6	6,300
2004-05	76,928	5,702	13.49	621.2	8,075
2005-06	74,349	5,556	13.38	644.2	8,665
2009-10	67,297	5,659	11.89	871.2	12,946
2010-11	66,288	5,636	11.76	858.6	12,953
Increase/Decrease	-27.3%	-12.6%	--	53.5%	111.1%

### Northwest Territories



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	9,381	519	18.08	101.9	10,862
2000-01	9,291	553	16.80	103.9	11,177
2004-05	9,220	606	15.21	132.0	14,318
2005-06	9,090	599	15.18	133.1	14,647
2009-10	8,564	628	13.64	214.9	25,092
2010-11	8,576	621	13.81	190.4	22,202
Increase/Decrease	-8.6%	19.7%	--	86.8%	104.4%

TABLE 1

## Selected Educational Statistics for Provinces and Territories: 1999 – 2011

### Nova Scotia



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	158,205	9,611	16.46	1084.0	6,852
2000-01	155,873	9,444	16.50	1318.2	8,457
2004-05	145,396	9,268	15.69	1156.4	7,953
2005-06	142,304	9,394	15.15	1257.2	8,835
2009-10	130,550	9,863	13.24	1493.0	11,436
2010-11	128,131	9,962	12.86	1533.8	11,971
Increase/Decrease	-19.0%	3.7%	--	41.5%	74.7%

### Nunavut



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	9,196	479	19.20	No Data	No Data
2000-01	9,171	477	19.23	No Data	No Data
2004-05	9,005	557	16.17	117.4	13,040
2005-06	8,720	638	13.67	117.8	13,509
2009-10	8,694	639	13.61	174.2	20,041
2010-11	8,515	652	13.06	186.7	21,923
Increase/Decrease	-7.4%	36.1%	--	--	--

TABLE 1

## Selected Educational Statistics for Provinces and Territories: 1999 – 2011

### Ontario



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	2,011,430	124,712	16.13	15,148.4	7,531
2000-01	2,026,039	126,763	15.98	15,708.8	7,753
2004-05	2,012,093	128,712	15.63	18,765.1	9,326
2005-06	2,006,732	132,106	15.19	19,830.3	9,882
2009-10	1,948,463	143,042	13.62	23,746.0	12,187
2010-11	1,953,624	145,082	13.47	24,869.8	12,730
Increase/Decrease	-2.9%	16.3%	--	64.2%	69.0%

### Prince Edward Island



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	24,089	1,444	16.68	140.6	5,837
2000-01	23,153	1,457	15.89	146.8	6,340
2004-05	22,393	1,486	15.07	169.0	7,546
2005-06	21,948	1,457	15.06	168.0	7,655
2009-10	19,955	1,529	13.05	234.8	11,768
2010-11	21,262	1,647	12.91	240.4	11,306
Increase/Decrease	-11.7%	14.1%	--	71.0%	93.7%

## Selected Educational Statistics for Provinces and Territories: 1999 – 2011

TABLE 1

### Quebec



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	1,100,453	74,415	14.79	8,186.9	7,440
2000-01	1,093,155	74,708	14.63	8,459.8	7,739
2004-05	1,065,214	77,598	13.73	9,320.3	8,750
2005-06	1,053,074	77,129	13.65	9,639.7	9,154
2009-10	990,124	77,093	12.84	11,388.1	11,502
2010-11	979,563	77,338	12.67	11,851.1	12,098
Increase/Decrease	-11.0%	3.9%	--	44.8%	62.6%

### Saskatchewan



Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	186,355	11,263	16.55	1,190.0	6,386
2000-01	184,316	10,971	16.80	1,216.0	6,598
2004-05	170,514	11,017	15.48	1,539.9	9,031
2005-06	167,388	11,031	15.17	1,601.9	9,570
2009-10	160,860	11,602	13.86	1,928.1	11,987
2010-11	161,672	11,912	13.57	2,016.0	12,470
Increase/Decrease	-13.2%	5.8%	--	69.4%	95.3%

TABLE 1

## Selected Educational Statistics for Provinces and Territories: 1999 – 2011

### Yukon

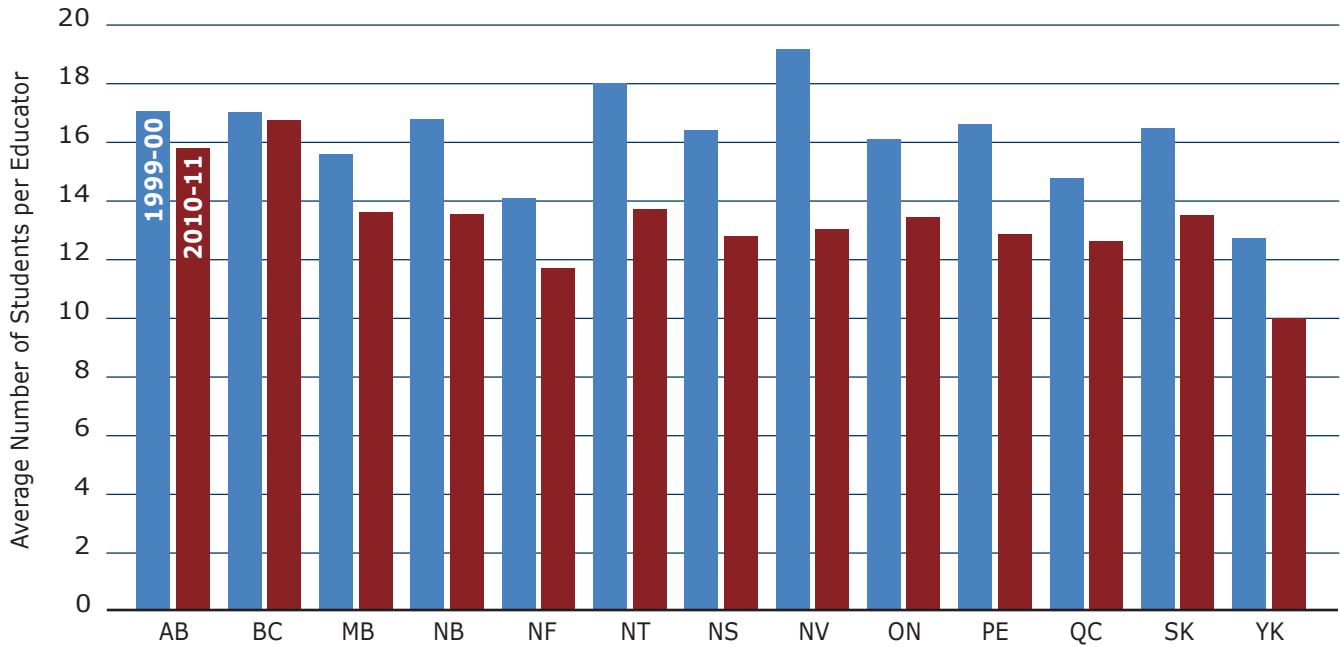


Year	Public School Enrollment	Public School Educators	Students/Educator Ratios	Total Expenditures (in millions of nominal dollars)	Expenditures per Student (in nominal dollars)
1999-00	5,766	453	12.73	73.1	12,673
2000-01	5,577	463	12.05	74.1	13,287
2004-05	5,272	460	11.46	83.5	15,837
2005-06	5,148	470	10.95	95.4	18,533
2009-10	4,777	478	9.99	96.6	20,216
2010-11	4,847	No Data	No data	103.3	21,313
Increase/Decrease	-15.9%	--	--	41.3%	68.1%

Source: Blouin (2008) and Statistics Canada (n.d.).

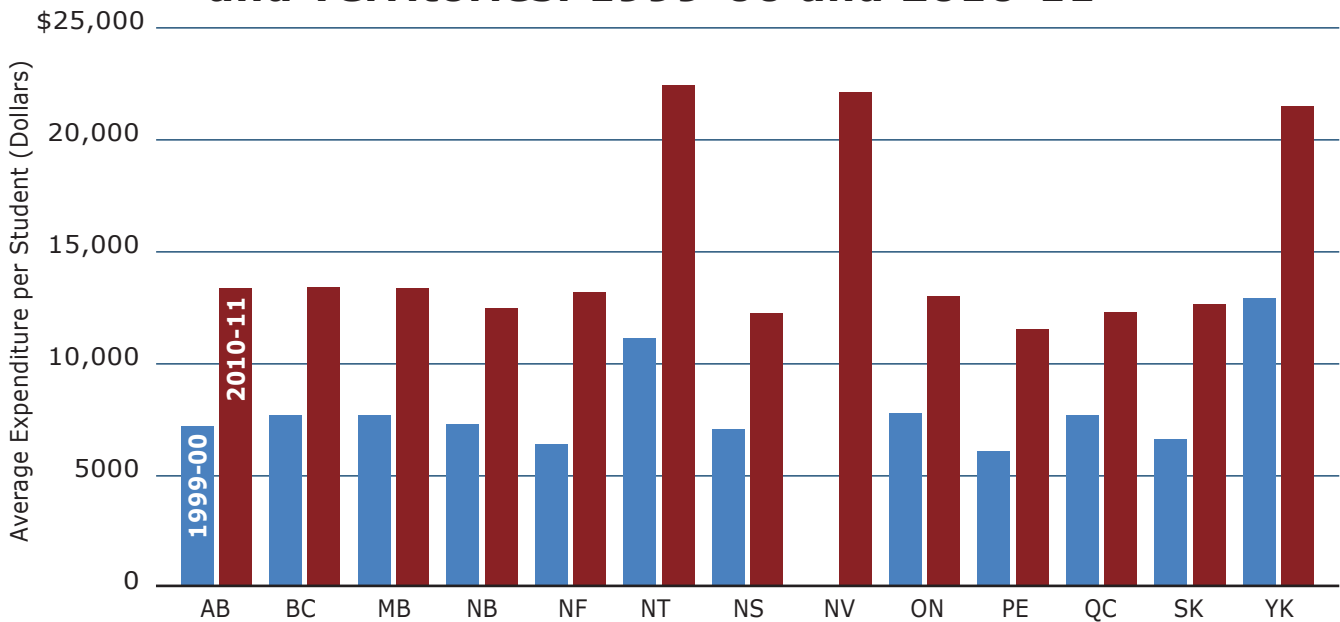
**CHART 1**

**Average Students/Educator Ratios in Provinces and Territories: 1999-00 and 2010-11**



**CHART 2**

**Average Expenditures per Student in Provinces and Territories: 1999-00 and 2010-11**



# Implications

Over the last decade, increasingly more resources have flowed into school jurisdictions with fewer and fewer students, school bureaucracies have expanded, educators have received higher salaries for teaching fewer students, and principals have managed schools with fewer students and more educators. Many governments, administrators, and especially teachers' associations claim that students benefit from lower students/educator ratios, better facilities, more divisional administrators, and educators with higher salaries. But little, if any, evidence supports this claim.<sup>9</sup>

Of course Canadians realize that all the social services, but particularly education and health care, are vital to their well-being. Nevertheless, they seem to assume that increasing costs result in better services while decreasing costs result in poorer services. Surprisingly, citizens do not seem to realize that the quality of the services is not definitively linked to the cost, and that resources spent in one area limit those that are available in other areas.<sup>10</sup>

If, over this 11-year period, the cost of educating public school students had been held to the increase in the CPI, the savings in the 13 jurisdictions would be around \$12.4-billion in 2010-11. This substantial saving could be used in lowering taxes, which would please conservatives, to fund other social services, which would please liberals, or to do a little of both, which would please neither end of the political spectrum.<sup>11</sup>

A cut of this magnitude may be too drastic, and it may be more reasonable to increase expenditures by, say, 10 per cent above the CPI for the average cost per student in each jurisdiction using the 1999-00 expenditures as the base. Using this formula, the savings in the 2010-11 school year would be \$2.05-billion in Alberta, \$766-million in British Columbia, \$532.8-million in Manitoba, and \$617-million in Saskatchewan. In other words, in this school year alone, the savings would be 28.3 per cent of the total public school expenditure in Alberta, 11.8 per cent in British Columbia, 23.6 per cent in Manitoba, and 30.6 per cent in Saskatchewan. The savings in the other provinces and territories would be similar.

Rethinking the way public education is funded is overdue. There is a pressing need to improve students' educational achievement so that Canadian students can compete successfully with each other and with students from other countries. This rethinking can begin by asking why the cost disease does not affect the private sector economy. Mainly, this results because competition among businesses constrains the cost of products, automobiles and computers, for example, over time.<sup>12</sup> To improve students' achievement with lower costs, the Atlantic Institute for Market Studies (AIMS) and Frontier Centre for Public Policy have proposed increasing competition among public and private schools.

The most effective way for provinces and territories to increase competition is to tie the funding of schools directly to the demand by using vouchers so that parents can send their children to public or independent (private) schools of their choice. Higher enrollments would mean larger budgets, and lower enrollments would mean smaller budgets. This policy would limit spending in the face of declining student enrollments.

It would also eliminate the unfair double burden placed on the increasing number of parents who are sending their children to private and/or propriety schools, such as Sylvan Learning and Kumon Centres, for expensive remedial tutoring. At present, these parents effectively pay twice—first, when they pay fees for private instruction and second when they pay taxes that support public schools—schools that apparently do not adequately meet their children’s educational needs.

Parent-controlled funding would also force schools to concentrate on objective, measurable, outputs, notably standardized measures of academic achievement. As a result, we would get schools that focus on teaching and learning that are essential for obtaining informed, enlightened, skilled, and employable citizens. Competition would mean that students would be tested and the results would be published so that excellent schools attracted more students while low-performing schools withered and closed. Of course, schools would be free to innovate in teaching, learning, and administration, but they would need to deal with the consequences of their decisions, both positive and negative.

These changes would save considerable money and make schools more responsive to the needs of students, parents, and taxpayers. Unfortunately, curing the cost disease is the only real option for sustaining viable educational systems across the country. The dismal conclusion is that costs cannot continue to increase at exponential rates without crowding out other necessary expenditures in provincial and territorial budgets.



## Endnotes

1. William J. Baumol, *The Cost Disease: Why Computers get Cheaper and Health Care Doesn't*, (New Haven, CO: Yale University Press), 2012.
2. William J. Baumol and William Bowen, *Performing Arts: The Economic Dilemma*, (New York: Twentieth Century Fund), 1966.
3. William J. Baumol, Social Wants and Dismal Science: The Curious Case of the Climbing Costs of Health and Teaching. *Proceedings of the American Philosophical Society*, Volume 137, 1993, pp. 612-637; S. Brownlee, *Overtreated: Why too Much Medicine is Making us Sicker and Poorer*, (New York: Bloomsbury), 2007; Mark Milke, How the Baby Boomers Blew it on Health Care. *C2C Journal*, October 29, 2009; Gwyn Morgan, Public Sector in for Some Wrenching Economic Truths, *Globe and Mail*, January 14, 2012; Jeffrey Simpson, *Chronic Condition: Why Canada's Health-Care System Needs to be Dragged into the 21st Century*, (Toronto, ON: Allen Lane), 2012.
4. Baumol, 2012.
5. Morgan, 2012.
6. Patric Blouin, Summary Public School Indicators for the Provinces and Territories, 1999/2000 to 2005/2006. (Report No. 81-595-M, No.067), (Ottawa, ON: Statistics Canada), 2008; Statistics Canada, Summary Elementary and Secondary Schools Indicators for Canada, the Provinces and the Territories, 2006/2007 to 2010/2011, (Report No.81-585-M, No.099), (Ottawa, ON: Statistics Canada), n.d.
7. Bank of Canada web site. Available at: <http://www.bankofcanada.ca/>
8. Baumol, 1993, 2012; Baumol and Bowen, 1966.
9. Rodney A. Clifton, *Obtaining Better Teachers for Canadian Public Schools: A Review of the "Teacher Effectiveness" Research Literature*, (Vancouver, BC: The Fraser Institute), 2013; John Hattie, 2005. The Paradox of Reducing Class Size and Improving Learning Outcomes, *International Journal of Educational Research*, Volume 43, 2005, pp. 387-425.
10. Baumol, 2012, p. 23.
11. Julian Le Grand, *Motivation, Agency and Public Policy: Of Knights and Knaves, Pawns and Queens*, (Oxford, UK: Oxford University Press), 2006.
12. Baumol, 1993, 2012; Morgan, 2012.

---

## Further Reading

February 2002

### Testing and Accountability: The Keys to Educational Excellence in Atlantic Canada

By Charles Cirtwill, Rod Clifton  
and John D'Orsay

<http://www.aims.ca/en/home/library/details.aspx/135?dp=aXM9Mg>

## About the author



**Rodney Clifton** is a Senior Fellow at the Frontier Centre for Public Policy ([www.fcpp.org](http://www.fcpp.org)), and a Professor Emeritus at the University of Manitoba. He received his B.Ed. and M.Ed. from the University of Alberta, his Ph.D. from the University of Toronto, and his Fil.Dr. from the University of Stockholm. In addition, he has been awarded a Spencer Fellowship from the International Association for the Evaluation of Educational Achievement, a Rh. Award from the University of Manitoba, a R.W.B. Jackson Research Award from the Canadian Educational Researchers' Association, and both an Edward Sheffield and a Distinguished Research Awards from the Canadian Society for the Study of Higher Education. He has written for numerous newspapers and journals, including the *Canadian Journal of Education*, *Policy Options*, *Sociology of Education*, the *National Post*, and the *Winnipeg Free Press*. His books include *Socioeconomic Status, Attitudes, and Educational Performances: A Comparison of Students in England and New Zealand*, *Authority in Classrooms*, *Crosscurrents: Contemporary Canadian Educational Issues*, and *Recent Social Trends in Canada, 1960-2000*. His most recent book, *What's Wrong With Our Schools and How We Can Fix Them*, was published in 2010 and was written with Michael Zwaagstra and John Long.

## Acknowledgement

I thank **Kathleen Canjar**, a Frontier Centre Intern, for helping organize, analyze, and check the data in this report. I also thank **Michael Zwaagstra**, Frontier Centre Research Fellow, and **John Long**, my friend and colleague, for suggestions and corrections. I am, of course, responsible for the remaining errors.



MB: 203-2727 Portage Avenue,  
Winnipeg, Manitoba Canada R3J 0R2  
Tel: 204-957-1567  
Email: [manitoba@fcpp.org](mailto:manitoba@fcpp.org)

SK: 2353 McIntyre Street,  
Regina, Saskatchewan Canada S4P 2S3  
Tel: 306-352-2915  
Email: [saskatchewan@fcpp.org](mailto:saskatchewan@fcpp.org)

AB: Ste. 603, 734-7th Avenue SW,  
Calgary, Alberta Canada T2P 3P8  
Tel: 403-995-9916  
Email: [alberta@fcpp.org](mailto:alberta@fcpp.org)

The Frontier Centre for Public Policy is an independent, non-profit organization that undertakes research and education in support of economic growth and social outcomes that will enhance the quality of life in our communities. Through a variety of publications and public forums, the Centre explores policy innovations required to make the prairies region a winner in the open economy. It also provides new insights into solving important issues facing our cities, towns and provinces. These include improving the performance of public expenditures in important areas such as local government, education, health and social policy. The author of this Backgrounder study has worked independently and the opinions expressed are therefore their own, and do not necessarily reflect the opinions of the board of the Frontier Centre for Public Policy.

Copyright © MMXIV by the Frontier Centre for Public Policy.

Date of First Issue: February 2014.

Reproduced here with permission of the author. Any errors or omissions and the accuracy and completeness of this paper remain the responsibility of the author.

ISSN 1491-78