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## Ontario, Canada: Reform to Support High Achievement in a Diverse Context

Since 2000, Canada has become a world leader in its sustained strategy of professionally-driven reform of its education system. Not only do its students perform well, they perform well despite their socio-economic status, first language or whether they are native Canadians or recent immigrants. Canada has achieved success within a highly federated system, which features significant diversity, particularly with respect to issues of language and country of origin. This chapter takes an in-depth look at Canada's success, taking the case study of the nation's largest province, Ontario.

It shows how consistent application of centrally-driven pressure for higher results, combined with extensive capacity building and a climate of relative trust and mutual respect, have enabled the Ontario system to achieve progress on key indicators, while maintaining labour peace and morale throughout the system.

## INTRODUCTION

Canada is a relative latecomer to the top of the international rankings. Unlike Japan and Korea, it was not a clear leader in international assessments in the 1980s and 1990s, and it was only after the release of the PISA rankings in 2000 that Canada found itself a leader of the pack (Table 3.1). These results have been confirmed in subsequent PISA tests, which have revealed that Canada has both strong average results as well as less dispersion among its high and low socio-economic status (SES) students than many other nations (OECD, 2010).

Understanding the factors behind this strong performance is not easy for two reasons. First, Canadian education is governed at the provincial level; the federal role is limited, and sometimes non-existent. Thus each of the 10 provinces and 3 territories has its own history, governance structure and educational strategy. Second, because Canada is a newcomer to educational success, there has not yet been the array of visitors, scholars, and other interested observers who could generate the kind of secondary literature which tells a story of Canadian success as a whole. Given those limitations, this report tries to balance breadth and depth by describing the features of the system and the relatively little that is known about the reasons for the success of Canadian education as a whole, coupled with an in-depth look at the recent educational strategy of the nation's largest province, Ontario.

**Table 3.1 Canada's mean scores on reading, mathematics and science scales in PISA**

	PISA 2000	PISA 2003	PISA 2006	PISA 2009
	Mean score	Mean score	Mean score	Mean score
Reading	534	528	527	524
Mathematics		532	527	527
Science			534	529

Source: OECD (2010), *PISA 2009 Results: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science (Volume I)*, OECD Publishing.  
 StatLink  <http://dx.doi.org/10.1787/888932366655>

This report aims to spur further investigations into the work of additional provinces, which would allow for a more definitive assessment of the reasons for Canadian success in future years. This question is especially important because Canada has achieved success within a highly federated system, which features significant diversity, particularly with respect to issues of language and country of origin. Given that many of the other PISA leaders are relatively small and culturally homogenous countries, Canada could provide a model of how to achieve educational success in a large, geographically dispersed, and culturally heterogeneous country.

## THE CANADIAN EDUCATION SYSTEM

As mentioned above, the most striking feature of the Canadian system is its decentralisation. It is the only country in the developed world that has no federal office or department of education. Education is the responsibility of its 10 provinces and 3 territories. Four of those provinces hold approximately 80% of Canada's 5 million students: Ontario (2 million), Quebec (1 million), British Columbia (610 000) and Alberta (530 000).

Responsibility within the provinces is divided between the central provincial government and more locally-elected school boards. The provincial government is responsible for setting the curriculum, determining many major policies for schools and providing the majority, if not all, of the funding for schools (funding patterns vary slightly across provinces). The minister of education is chosen by the premier from elected members of the provincial legislature, and becomes a member of the ruling party's cabinet. The deputy minister is a civil servant, who carries much of the operational responsibility for the workings of the department. Tensions can exist between the civil servants in the province's Department of Education, who generally by training and inclination are sympathetic to the views of educators, and elected officials who may have a broader reform agenda.

Local school boards are elected. They employ staff and appoint principals and senior administrators. They also set annual budgets and make decisions on some programmes. Over time, the number of districts has shrunk considerably through consolidation processes. In Alberta, for example, there were historically more than 5 000 districts, which by the end of the 20th century had been consolidated to less than 70. There is no interim level of administration between the provinces and districts in Canada – provinces and districts work directly with one another on province-wide initiatives.



Teachers are unionised in Canada, and the unit of collective bargaining varies across provinces – some bargain at the local level, some at the provincial level, and some are mixed. Teacher training takes place in universities, although the standards for certification have traditionally been set by the provinces. In 1987, British Columbia was the first to make its teachers self-governing, granting to the British Columbia College of Teachers exclusive responsibility for governing entry, discipline, and professional development of teachers. In 1996, Ontario followed suit, creating an Ontario College of Teachers which governs similar functions; on its 31 member governing council sit 17 teachers elected by the College, and 14 members appointed by the Ontario Minister of Education. In both cases, more traditional issues, such as wages, continue to fall under collective bargaining and are separate from the work of these self-regulating bodies.

The Canadian system is also internationally distinctive for its efforts to balance respect for diversity of language and religious affiliation with province-wide educational goals. For religion, Section 93 of the Constitution Act 1867 sought to protect parents' rights to send their children to Protestant and Catholic schools, subject to provincial control over funding and teachers, but using public funding. This structure means that these schools and school boards in Canada are within the public system and under partial control of the Ministry of Education, not in the private sector. These schools were named "separate schools" in Canada West and "dissentient" schools in Canada East. There is variation across provinces in exactly how these arrangements have evolved; in some provinces – like Alberta, Ontario and Saskatchewan – separate public and dissentient schools exist; in others, like Manitoba and British Columbia, parents seeking a Catholic or Protestant education have to send their children to private schools, though even these often receive some degree of public funding.

While initial struggles in Canada were around religious differences, in more recent years language has shown greater salience. Section 23 of the Canadian Charter of Rights and Freedoms protects parents who speak a minority language (English or French), gives their children the right to receive primary and secondary instruction in their native language, and allows for the establishment of "minority language educational facilities," if sufficient numbers warrant it. There has been some controversy over how many students speaking a minority language are required to invoke this right; in Quebec it has generally been interpreted to mean only one, whereas in Nova Scotia one judge felt that 50 students were too few to justify the creation of a French school. Courts have also had to adjudicate what it means to have "minority language educational facilities", with some seeing that as requiring only separate francophone programmes within existing schools, whereas others judge it necessary to create separate francophone schools. The overall consequences of the protection of both language and religious rights is that in some provinces, such as Ontario, as many as four separate systems of public schools can exist within one province (English, English Catholic, French, French Catholic).

Students in Canada are grouped by ability in ways that are very similar to the United States' system. Elementary school-aged children are often placed in ability groups within heterogeneous classrooms. Students in secondary schools are placed into tracks or streams, based on perceived ability levels. Most high schools have tracks such as general, advanced, vocational, or university entrance. These practices have faced criticism for not sufficiently challenging students in the lower tracks, but sorting by perceived ability persists.

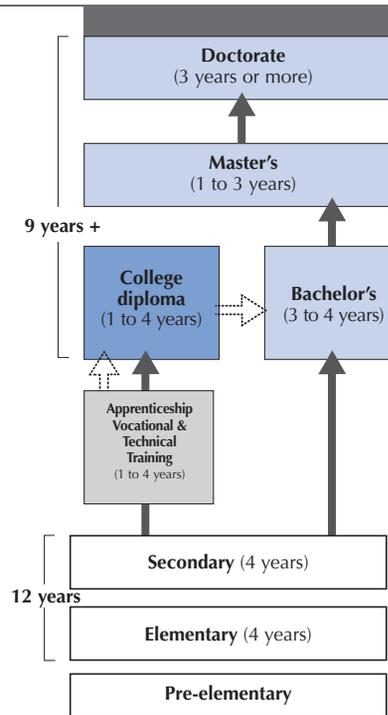
The thumbnail history of Canadian educational reform in the post-war period shares much in common with the United States and the rest of the industrialised world. Strong economic growth in the 1950s and 1960s, combined with increasing demand for schooling, led to rapidly increasing spending on schooling between 1950 and 1970, with much of the energy focused on school construction and teacher hiring. Because of the increased demand for teachers, teacher wages rose considerably over this period. Schools and teachers were given more autonomy over what to teach, and the inspection functions of provincial ministries were delimited or eliminated. At the same time, provinces were taking increasing financial responsibility for schooling: in 1950, localities paid 64% of the costs compared to 36% from the provinces, and by 1970 the ratio had largely reversed, with provinces paying 60% and localities 40%. By 1997, eight out of the ten provinces had taken total responsibility for funding. The structure of the Canadian education system is lean and uniform, as shown in Figure 3.1.

The post-war boom of the 1950s and 1960s gave way to hard economic times in the 1970s, and the final three decades of the 20th century saw Canadian education seeking a way to cut costs while increasing educational outcomes. Globalisation and the arrival of the knowledge economy increased the importance of schooling as a matter of economic competitiveness. A neoliberal emphasis on efficiency pervaded the system, and support for greater choice, growing support for private schools, and increased state accountability became the order of the day.

While all four leading provinces increased the role of centralised testing and curriculum planning in the 1980s and 1990s, some of these efforts combined greater centralised accountability with more school-level control, under a “tight-loose” philosophy of school improvement.<sup>1</sup> The emphasis on testing in Canada was extensive compared to most European systems, but not nearly as prominent as in the United States.

■ Figure 3.1 ■

### Canada's education system organisation



The first decade of the 21st century has seen a set of educational reforms which emphasise the centralised standards and assessments which also characterised the earlier reforms of the 1980s and 1990s. However, the new reforms include a strong effort to try to build capacity among teachers, and to generate teacher buy-in to the improvement strategy. While the earlier strategy of testing grew out of an increasing scepticism about the quality of education and a more general distrust of government, the new strategy seeks to address this distrust as a core problem and aims to generate a virtuous cycle of greater performance leading to higher levels of trust, which in turn generate more energy for continued improvement. This strategy is described in some detail below, taking the case of Ontario. But first we discuss the factors behind Canada's general successful educational performance, and especially its success at educating and integrating its immigrant children.

## CANADIAN SUCCESS IN EDUCATION

When asked to explain Canada's strong nationwide PISA results, several Canadian officials and informed observers could only offer informed hunches, given the absence of any meaningful national government role in education. These hunches fell generally into three categories: Canadian culture; the Canadian welfare state; and three policy-specific factors (teacher selectivity, equalised funding, and provincial curricula).

### Cultural factors

In terms of culture, observers note that parents in Canada are generally supportive of their children's education and can be seen as an asset to the schools. Comparative PISA data on the leisure reading habits of Canadian students suggest that Canadian students are more likely than any other children in the world to read daily for pleasure (Tibbetts, 2007). While culture is notoriously diffuse and difficult to measure, further exploration of its potential influence seems warranted because it could help to explain the similarity of results across provinces that differ in their educational strategies.



## The welfare state

Despite its provincial educational structure, Canada does have a strong national welfare state, which was born of the crisis spurred by the Great Depression and which continued to grow in the 1960s. Observers suggest that this has had two important educational consequences. First, children and their parents have access to national health insurance, and adults are protected from the vicissitudes of capitalism by a strong social safety net. While child poverty rates in Canada are fairly high by international standards (Canada had the 7th highest child poverty rate of 23 countries measured), variation across provinces in child poverty rates are correlated with PISA outcomes (e.g. Alberta has the lowest rate at 11.2% and the highest PISA scores).

Second, the idea of a welfare state and a common good is much more firmly entrenched in Canada than in its more individualistic neighbour to the south (the US). The idea that health care and other social services are a right and not a privilege carries over into education, where there is a broadly-shared norm that society is collectively responsible for the educational welfare of all of its children. The combination of this norm with the protection afforded by the welfare state creates a climate in which school success is expected for all students. As Harvard Professor Richard Elmore, who has worked for years with Canadian schools, said during interviews for this report:

While the structure and artefacts of the Canadian system look about the same as the American one (professional learning communities, resource rooms for data driven instruction), the culture in which this work takes place is entirely different. Canadian teachers feel that the state has done its part by delivering the students to the schools ready to learn, and that they, in turn, have a deeply-felt obligation and responsibility to ensure that the students do indeed get educated. (Interview conducted for this report)

## Policy factors

In terms of policy, despite the lack of a national co-ordinating body, a number of respondents suggest that the provinces are quite similar in some of their key policies. The reason given was what scholars in other contexts have called “isomorphism”, or the desire to acquire legitimacy by becoming similar to other organisations. Canada possesses a Council of Ministers of Education (CMEC), which is the forum through which the ministers of education in the respective provinces can meet for co-ordination purposes. While this body was consistently described as limited in its impact, because it acted only when all of the ministers agreed (infrequently), it does fulfil an important information-sharing function and enables good ideas and practices to spread across provincial lines.

Neil Guppy, a professor of sociology at the University of British Columbia and author of a textbook on Canadian education, put it this way during an interview for this report:

My own take is that autonomy is overblown – many of the textbooks used by the provinces are identical, our teacher education programs are very similar, the arrangements of schooling (kindergarten, elementary, middle, high) are very similar, unionisation is similar, school administration personnel shuffle between provinces with little problem, etc. To my knowledge all universities treat student grades from each province as substitutable even though we do not have SAT or national exams. Imitation from, and monitoring of, other jurisdictions is high. In most English-speaking provinces you are likely to find as much variation between rural and urban as you are province to province. (Interview conducted for this report)

Three common policy factors (in addition to the welfare state and cultural reasons) were highlighted as potentially important to pan-Canadian educational success:

- The establishment of province-wide curricula. These are developed by the respective ministries of education through a process of extensive consultation with groups of teachers and subject matter experts. In some provinces these curricula are fairly detailed, whereas in others they serve more as guidelines of what should be learned and when. While there is wide variation in the degree to which these curricula actually penetrate classroom practices, they do provide basic guidance as to what should be learned by which students at what ages. In recent years, some of the smaller provinces in the west have moved towards co-ordinating these efforts to establish greater uniformity across provinces, similar to consortia of states in the United States working together towards Common Core standards. Recent PISA results have shown that Alberta is the highest-scoring province, and the Alberta Ministry ascribes this success in part to the quality of its curriculum.
- The high degree of selectivity in choosing teachers. The 2007 McKinsey report on leading PISA countries emphasised that one factor which differentiated PISA leaders from those further down the chart was the degree to which teacher education programmes were able to draw their students from the top end of the talent pool (Barber and Mourshed 2007). Ben Levin, former deputy minister in Ontario and a widely cited scholar on Canadian education, said that Canadian applicants to teachers colleges are in the “top 30%” of their college cohorts.



One Canadian teacher interviewed explained that it was difficult to get into a teachers' college in Canada, although, as he pointed out, "everyone knew that there was a loophole – you could always cross the border to the United States. Anyone can get credentialed there." The education within these teacher training institutions is seen by some to be of high quality; Levin estimates there are perhaps 50 institutions in all of Canada, as opposed to hundreds across the United States, which allows for greater monitoring of training quality. Other respondents agreed that teacher selectivity was high, but were more sceptical of the quality of the training institutions.

- Equalised funding. Because funding has shifted entirely or almost entirely to the province level, the provinces are able to provide funding to offset the greater neediness of some of their students. Funding from the provinces to districts is generally split into three categories: block grants based on number of students; categorical grants which are either used to fund particular programmatic needs (e.g. special education) or to help districts meet specific challenges in providing basic services (e.g. more remote districts need more funds for transportation); and equalisation funding, which is used in the districts that retain some local funding to equalise the poorer districts.

These factors represent the views of a small sample of Canadian officials and observers (see interviewee list at end of chapter) about how they understand their own success. However, there is clearly more research and analysis needed. There are many countries and states/provinces elsewhere that have centralised curricula without yielding these kinds of results. There is also an extensive literature debating the importance of funding, which broadly suggests that money can help, but that it all depends on how it is spent. The teacher selectivity argument carries more weight because it is one of the few factors that more generally differentiates PISA leaders from the rest. In general, the major features of the Canadian system don't look that different from many other systems that do much less well on the PISA, and thus it is particularly difficult to know the sources of Canada's success.

Similar structures can actually house very different types of work depending on the culture in which they are situated. Curriculum, funding and teacher talent are resources that provinces and schools can draw upon to create high quality schooling if they are inclined towards collaboration and are willing to take internal collective responsibility for student outcomes. One example of such practice in Ontario will be explored below. Before getting to that, however, it is important to address one unique element in Canada's performance: its education of immigrant children.

### CANADIAN SUCCESS EDUCATING IMMIGRANT CHILDREN

One of the most striking things about the Canadian results is their success with immigrant children. By some estimates, Canada has the highest rates of immigration per capita in the world. It is a country of which former prime minister William Lyon MacKenzie King once famously said, "If some countries have too much history, we have too much geography," referring to the way in which Canada is a relatively young nation comprising travellers from all over the world. Canada takes in about 250 000 immigrants per year (in a country of approximately 34 million inhabitants). Given the size of the land area, the relative low density population and low birth rates, immigrants are seen in Canada as an important and needed resource. All of the major political parties currently support either sustaining or increasing rates of immigration; there is no popular support for restricting immigration.

Patterns of immigration have shifted over time. Until the 1970s, the majority of immigrants came from Europe; over the past 40 years, most have come from Asia and the developing world. In 2007, the leading source countries of Canadian immigrants were China and India (about 28 000 each), the Philippines (20 000), and Pakistan (10 000). Smaller groups of immigrants come from Algeria, Colombia, France, Iran, Romania, Russia, South Korea, Sri Lanka, the United Kingdom and the United States, each of whom sends more than 3 500 immigrants per year.<sup>2</sup> In total, these patterns of immigration mean that there are 40 000 newcomers to public schools each year; 80% of these students are non-English speaking, and 90% will go to school in Montreal, Toronto or Vancouver.

Immigration in Canada is organised into three classes – refugee populations (22 000 in 2008), family class sponsorships (65 000), and workers imported to fill a gap in the Canadian economy (150 000).<sup>3</sup> The fact that 60% of immigrants are selected on the basis of their ability to make an economic contribution creates a highly educated immigrant class. In total, 23% of Canadian workers in 2008 were born abroad, as were 49% of doctorate holders and 40% of those with masters' degrees.

PISA results suggest that within three years of arrival in Canada, immigrants score an average of 500 on the PISA exam, which is remarkably strong by international standards. For comparison's sake, in the 2006 PISA assessment of reading, Canadian first generation immigrants scored an average of 520 points, as opposed to less than 490 in the United States and less than 430 in France. Canada is also one of very few countries where there is no gap between



its immigrant and native students on the PISA. (By contrast in the United States the gap in reading is 22 points, and in France and Germany it is around 60 points). Second generation Canadians perform significantly better than first generation Canadians, suggesting that the pattern is of progress by all students over time. Finally, Canada is one of the few countries where there is no difference in performance between students who do not speak the language of instruction at home and those who do.

Why has Canada done so well at educating its immigrant students? Interviewees' responses can be grouped around three factors. First and most importantly, because the majority of immigrants are selected on the basis of their ability to contribute economically, many immigrant children have highly-educated parents. A 2006 OECD report found that, on average, first generation Canadian students had parents with as many or more years of education as native-born parents. These advantages in terms of parental education and socio-economic status also translated into school resources; in the same study, Canada was one of only a few countries in which immigrant students had access to equal or greater resources than native-born students. Specifically, student/teacher ratios, physical infrastructure, classroom climate, and teacher morale were on average higher for the immigrant students sampled than for native students (OECD, 2006).

Second, Canadian multiculturalism provides a distinct philosophy that seeks to both respect the importance of native cultures while also incorporating immigrants into a distinctively Canadian identity. In practice, this has meant that immigrant students are for the most part placed into classes with native students in English and French; native language instruction primarily takes place in non-profit organisations and other work outside of schools.

Third, in some of the provinces that have had the largest influx of immigrants, an explicit policy has sought to support the success of these students. In British Columbia, for example, students participate in the regular curriculum, but the ministry provides funds for additional language support if a series of criteria are met. These include: *i*) evidence that the student lacks proficiency and will not reach it without additional support; *ii*) an annual instruction plan is prepared that meets the needs of the student; *iii*) a teaching specialist participates in the creation and review of the plan; *iv*) the school must provide pull-out and in-class support for the student, as well as support and training for the affected teachers.

All in all, Canada has a positive and reinforcing cycle when it comes to immigration and educating immigrant students. It is an attractive destination for immigrants, and immigrants are welcomed as part of both a cultural commitment and as an economic necessity. The majority of immigrants who come to the country are selected to fill economic needs. This means that they are not seen as a threat or as competing for jobs and increases the political support for their continued arrival. Immigrant students as a group have much the same advantages in terms of parental education and socio-economic status as native-born students, and they attend schools that by all measures are relatively equal. Philosophically, they are welcomed as part of Canada's commitment to multiculturalism, and some programmes are in place to supplement students' learning of English and French, although the emphasis is largely on immersion. Overall, this combination of factors creates a fairly welcoming environment for relatively advantaged immigrants, and as we have seen, they correspondingly fare extremely well by international standards.

## THE ONTARIO EXPERIENCE

### Education system and context for reform

From 2003 to 2010, Ontario was a world leader in its sustained strategy of professionally-driven reform of its education system. Initiated by Premier Dalton McGuinty following his election in 2003, the Ontario strategy has achieved widespread positive results in increasing elementary literacy and numeracy, improving graduation rates, and reducing the number of low-performing schools. The constellation of elements that came together to allow this strategy to succeed is described below.

Ontario is the largest province in Canada, with an area of 400 000 square miles, and a population of approximately 13 million, or 40% of all Canadians. It is a highly urbanised province, with 80% of students located in metropolitan areas. In terms of diversity, 27% of Ontario students were born outside of Canada and 20% are visible minorities. Toronto, the main city in Ontario, is one of the most diverse cities in the world.

The oversight of education in the province of Ontario is divided between the Ontario Ministry of Education, covering school-level education, and the Ministry of Training, Colleges and Universities, covering vocational and higher education.

For school-level education there are four sets of locally-elected school boards in Ontario, meeting Canada's constitutional requirements for public support of minority languages and religious minorities (Levin, 2008):

- 31 English school boards serve about 1.4 million students;
- 29 English catholic school boards serve about 590 000 students;
- 8 French catholic boards have 70 000 students; and
- 4 French public boards have 23 000 students.

This means that any given area of the province will be served by four boards, introducing some degree of choice into the system. There are about 5 000 schools in the public system; there is no public funding for private schools.

There were two major initiatives pursued by the Ontario Ministry of Education over this time period:

- The Literacy and Numeracy initiative: to increase reading and mathematics outcomes in elementary schools. Through a deep capacity-building strategy (described below), this initiative has succeeded in raising the average pass rate in provincial exams from roughly 55% (2003) to roughly 70% (2010) in reading, mathematics and writing in grade 3. Similar gains of about 10-12 percentage points are apparent in the same subjects in grade six.
- The Student Success initiative: to increase the high school graduation rate to 85%. The background to this programme was that the road to dropping out of high school starts early; by tracking students who have failed one or more courses in 9th grade, it is possible to identify potential dropouts early. By funding a "student success officer" in each school, and creating programmes of "credit recovery" through which students could make up the parts of courses that they failed, the graduation rate has increased from 68% to 79%.

Ontario benefits from a set of background conditions that helped to facilitate much of its success. Politically, the McGuinty Liberal premiership benefitted from following a conservative government that was extremely unpopular with teachers and others working in the sector. The conservative government is generally credited with having created a province-wide curriculum and instituted an accompanying assessment and accountability framework, but it alienated the education community in the process by cutting funding, reducing professional development time by half, running television ads demonising teachers, and increasing support for private schools. During this period 55 000 students left the public system, and polls suggested that more than 15% of public school parents were actively considering private school options. There were several teacher strikes, including a two-week work stoppage protesting government legislation in 1997. Morale was extremely low and the relationship between the government and teachers was highly acrimonious. Union leader Rhonda Kimberly Young, former President of the Ontario Secondary School Teachers Federation, had this to say when interviewed for this report about the years before McGuinty government took over:

Then we got the conservatives and they came in on what they called a "Common Sense Revolution" which implied that there was going to be a miracle. They could lower everybody's taxes. They could cut waste. They could do more with less – better quality services at lower cost. Unfortunately, they were able to sell this idea to the voters. When they took office Mike Harris was the premier and the first education minister that he appointed was a high school dropout. We saw that as fairly indicative of their approach to education. [That they were not] going to be looking at pedagogy, research and those sorts of things but rather were coming in with a hammer...and they did. In 1998 we had a province wide walkout – it was a political protest. (Interview conducted for this report)

In this highly polarised environment the Liberal party made an early decision to make education the central issue in the next provincial election. As opposition leader, McGuinty made a major policy speech in 2001 committing the party to a quite specific set of reforms, including class size reductions, should they be elected. This speech was followed up by the development of a very detailed education platform with 65 policy proposals. By the time the Liberals took office in 2003 they believed they had a strong reform mandate.

McGuinty's first Education Minister, Gerard Kennedy, came in with a running start, for he had been the opposition party's education "critic," *i.e.* shadow minister. In his own words, he came into office unusually well-prepared:

During my time as critic I visited lots of schools and school boards all across the province. I spent a lot of time in lunchrooms with teachers, in meetings after school with parent groups, and I sat down with student councils whenever I had the opportunity. I met with every key stakeholder group not only to build relationships but to engage them in the development of our policy agenda. I must have met with 6,000 people during that period.



We needed to create a new political consensus on education. The current level of politicisation of the system was taking a huge toll on public confidence. In the preceding eight years of Conservative government hundreds and hundreds of hours of school had been lost to strikes and lockouts, and this level of disruption was at the core of public discontent with the system. We felt we had to change that dynamic if we were going to have any chance of successfully moving our reform agenda. We needed to re-establish trust between the government and the profession, and between school boards and teachers. (Interview conducted for this report)

In addition to Minister Kennedy's leadership role, the McGuinty government benefitted from the advice and leadership of a deeply knowledgeable and experienced school reformer, Michael Fullan, a University of Toronto expert who had written widely and lectured around the world on school reform. He became McGuinty's special advisor on education, and helped recruit Ben Levin, another deeply knowledgeable academic and practitioner, to come into the government as Kennedy's Deputy Minister. All of these figures shared a relatively similar vision of capacity-building system change, which helped to anchor and sustain the reforms in the years that followed. McGuinty himself also visited England to learn about somewhat similar British reforms, and the Ontario strategy drew upon the British strategy with some important modifications (described below).

Financially, funding in Ontario had shifted in 1997 so that 100% of school funding came from the province. Thus while the system does have multiple levels, province-wide funding increased the leverage of the ministry.

### **Leadership, goals and capacity for improvement**

The literature and interviewees are all clear that the sustained leadership of Premier McGuinty has been fundamental to the success of the reforms. McGuinty ran on a platform of becoming the education premier, and through his election and re-election in 2007, he has kept a sustained focus on educational improvement. McGuinty was personally involved in the reforms, and has met repeatedly with key educational stakeholders over the course of his premiership to emphasise the importance of the reforms. Michael Fullan, who was the architect of the strategy and an advisor to the premier, said of McGuinty during interviews for this report:

The Premier is key, obviously. If Premier McGuinty had left it would have been a different story. I said to him in the first term, when you get re-elected.... [don't] lose the plot, fail to keep the sustainability and focus on it. And the week after he got re-elected, he said to me, 'Not only am I not going to lose the plot, I'm going to intensify it, become even more committed and more confident and more impatient. (Interview conducted for this report)

In contrast to the kind of "spinning wheels" which often doom school reform efforts as systems lurch from leader to leader, or to situations where education falls off the leadership's agenda after an initial bout of enthusiasm, McGuinty has maintained an active, sustained, personal and consistent focus on education over the past seven years. Deputy Minister Costante, who took office in 2009, recalls receiving a call from Premier McGuinty on the day he took office with the following message:

Don't get distracted. There will be a lot of people asking you to do all sorts of nice things out there, some of which may be perfectly good but will not add to our student achievement agenda. I want you to keep focused on the student achievement agenda. (Interview conducted for this report)

And just in case the new deputy thought he might have an opportunity to coast on the achievements of the past several years, McGuinty has tasked Costante with developing and implementing a new full-day kindergarten programme for four and five-year-olds in 600 schools by September 2010.

From the beginning, Ontario's theory of change centred on the fact that school systems are easily distracted and drawn into many questions and controversies that have little or no relationship to improving student learning and educational attainment. They also believed that creating systemic change across several layers of government and 5 000 schools would require a very limited number of goals that would serve as a focus for coherent effort. McGuinty had made two central commitments that guided the work of the ministry: increasing literacy and numeracy in elementary schools, and increasing the high school graduation rate. They also set ambitious, but hopefully not unrealistic, long-term quantitative targets for each of these goals: to improve the provincial passing rate in literacy and numeracy from 55% to 75%, and to increase the high school graduation rate from 68% to 85%.

To achieve these goals, they had a seemingly simple, but actually quite complex theory of action. This work was informed by a careful analysis of the failings of previous initiatives. Most top-down initiatives, they concluded, were

unable to achieve deep and lasting changes in practice because: *i*) the reforms were focused on things that were too distant from the instructional core of teaching and learning; *ii*) the reforms assumed that teachers would know how to do things they actually didn't know how to do; *iii*) too many conflicting reforms asked teachers to do too many things simultaneously; and *iv*) teachers and schools did not buy in to the reform strategy. To achieve sustained change, then, would require:

- Strategies directly focused on improving the act of teaching.
- Careful and detailed attention to implementation, along with opportunities for teachers to practice new ideas and learn from their colleagues.
- A single integrated strategy and one set of expectations for both teachers and students.
- Support from teachers for the reforms.

Both province and district policies would need to be crafted with all of these goals in mind.

Of all of these points, the last one (gaining teacher support) was perhaps most important to the new strategy. To improve skills across 5 000 schools would require a continuous and sustained effort by hundreds of thousands of teachers to try to improve their practice. This, they thought, could only happen if teachers were “onside” (to use their word).

To this end, the ministry drew a sharp contrast between its capacity-building approach to reform and the more punitive versions of accountability used in the United States, and, to a lesser extent, in Britain.<sup>4</sup> They chose to downplay the public reporting of results, and they emphasised that struggling schools would receive additional support and outside expertise rather than be punished or closed.

It is clear that the ministry acted extremely skilfully politically to win over teachers, schools, and unions to their vision of reform. A key move was the appointment of Gerard Kennedy as Deputy Minister. He was a vigorous critic of the previous administration and widely seen as someone who supported public education and was sensitive to the needs of teachers. He met quarterly with the major teachers' unions, superintendents' organisations, and principal associations to discuss ongoing reform strategies. The ministry also created the Ontario Education Partnership Table where a wider range of stakeholders could meet with ministry officials two to four times a year. This led to Working Tables, where smaller groups of stakeholders worked in more detail on particular issues.

Very important to these efforts was the signing of a four-year collective bargaining agreement with the four major teachers' unions in 2005, covering 2004 to 2008. In this agreement, the ministry was able to negotiate several items that were consistent both with their educational strategy and with the unions' interests. Specifically, McGuinty had pledged to reduce class size in elementary schools, which created 5 000 new jobs. The ministry and the union also both wanted 200 minutes of weekly preparation time for all elementary school teachers; this created 2 000 new positions in music, arts, physical education and languages. The agreement also provided money for the hiring of a student success position, full or part-time, in each school. This agreement thus both pushed forward the educational agenda and created a sustained period of labour peace which allowed for a continued focus on educational improvement. In 2008, a second four-year agreement was signed.

To achieve these results, the ministry created a well thought-out implementation strategy. To implement the literacy and numeracy initiatives, they created a new 100-person secretariat responsible for building the capacity and expertise to do the work. This was separate from the ministry, and thus was able to start fresh without the usual bureaucratic obstacles. They also required that teams be created in each district and each school in order to lead the work on literacy and numeracy. By so doing, they paired external expertise with sustained internal time and leadership to push the initiative. Avis Glaze, who was responsible for leading the Literacy and Numeracy Secretariat, said during interviews for this report that the effort succeed in part because of its field base:

We recruited a new team of people who had deep experience in the field – teachers, principals, subject matter specialists – people who were deeply respected by teachers and schools, and were not seen primarily as representatives of the department. This mini-organisation was largely based in the field – we had 6 regional teams plus one French language team, each of 6-8 people. This means that the majority of the people in the Secretariat were actively working in the field, building relationships with schools, principals and teachers, rather than in the home office back at the Ministry. (Interview conducted for this report)



They also tried to ensure that reform was really a two-way street, rather than simply something imposed from above. As Michael Fullan describes it, one of the lessons learned from the British model was to avoid mandating from the top:

Michael Barber in the English strategy eventually called their strategy “informed prescription”. So the idea of informed prescription was that you do your homework at the centre, you get informed and then you pretty much prescribe the curriculum and the instructional methods and use of time, including such things as the literacy hour. By contrast, when we set up our secretariat, we said to the field, to our 72 districts, don’t worry, we are not going to come up with informed prescription and start advocating particular usages. Rather, what we are going to do is join in partnership with you in the field, the sector, and identify good practices and consolidate those and spread them. They might eventually come to have a certain kind of status that comes close to being non-negotiable, but we are not in the business at the centre of telling you what to do. We are in the business of jointly co-discovering it, so that’s what we did and that’s how we did it. (Interview conducted for this report)

The government pursued a different strategy for the Student Success initiative in high schools. Rather than sending out a team from the ministry, they gave the districts money to hire a “Student Success leader” to co-ordinate efforts in their district. The ministry also gave money for the district leaders to meet and share strategies. Again each high school was given support to hire a provincially-funded Student Success teacher and was required to create a Student Success team to identify students showing early indicators of academic struggles and design appropriate interventions.

An important element in the development of the Student Success strategy was the creation of a new programme in high schools called the High Skills Major. This aimed to take high school students who were not engaged by the traditional academic curriculum and give them a different menu of courses. While earlier approaches in this vein have justifiably been accused of tracking working class students away from higher end jobs, by working with prospective employers, the High Skill Major programme created more hands-on courses to give students practical skills to lead to employment opportunities. More than 20 000 students are now enrolled in 740 High Skill Major programmes in 430 schools.

The ministry also had a clear theory of comparative advantage in terms of who should do what during the reforms. The role of the ministry was to set clear expectations and targets, to provide funding, to create a working collective bargaining agreement that would support improved teaching and learning, to provide external expertise, and to provide support for struggling schools. The role of the district was to align its personnel and hiring policies with the overall strategy, and to support the schools as they went through continuous processes of learning. However, much of the real action necessarily had to happen in the schools, where teachers worked in communities to think about practical problems and to learn from one another. While the mission and pressure came from the top, there was a clear recognition that it was at the school level in which change had to happen, and that the role of other actors in the system was to support the learning and change occurring in the schools.

### **Economic and sociological theories of action: Motivation, trust and respect versus punishment and competition**

The Ontario strategy differs from a number of other reform efforts, particularly in the United States, in its lack of punitive accountability, performance pay, and competition among schools. Very broadly speaking, the architects of the reforms seem to take more of a “*homo sociologicus*” than a “*homo economicus*” view of reform. The architects of the reforms drew upon organisational theorists like Peter Drucker and Edwards Deming rather than economists. From this viewpoint, the problem was more to do with lack of knowledge than lack of will, and the key to motivation was not individual economic calculations but rather the chance to be part of successful and improving schools and organisations. This meant that the key ideas were less about “hard” concepts like accountability and incentives and more about “softer” ideas like culture, leadership and shared purpose. The key challenge was to create layers of organisations directed towards systemic improvement. There is also little emphasis in the Ontario strategy on “getting better people”; instead the idea is to work with what you have and upgrade their skills. In all of these respects, the Ontario model challenges more market-based theories of reform.

The Ontario strategy is perhaps the world’s leading example of professionally-driven system change. Through consistent application of centrally-driven pressure for higher results, combined with extensive capacity building, in a climate of relative trust and mutual respect, the Ontario system was able to achieve progress on key indicators, while maintaining labour peace and morale throughout the system.

## LESSONS FROM ONTARIO

### ▪ Commitment to education and to children

The strong cultural commitment to education seems to be an important underlying national value that helps explain Canada's overall strong performance despite the absence of a national governmental role in education. The commitment to the welfare of children, as expressed in Canada's strong social safety net, helps explain why Canada's achievement gaps, while still worrisome, are nowhere near as profound as those in the United States.

### ▪ Cultural support for universal high achievement

The extraordinary performance of Canada's immigrant children is largely a reflection of the high expectations immigrant families have for their children, and of the fact that those high expectations seem by and large to be held by educators as well. Because Canada has historically seen its immigrants as crucial assets for the continuing development of the country, and because its immigration policies reflect those values, schools see it as their role to integrate children into the mainstream culture as rapidly as possible. If anything, the value placed on high achievement for immigrant children seems to have positive spill over effects for expectations for native-born children, rather than *vice versa*.

### ▪ System coherence and alignment

This is one of the big lessons from Ontario's reforms. Although some observers complained about the sheer number of initiatives launched by the McGuinty government over the years, it is apparent that the Ontario reform designers worked hard to develop and implement a systemic response to the problems and challenges they inherited. An important, often underestimated barrier to achieving system coherence is the lack of a shared understanding among key stakeholders about how key governmental leaders see the problems of the system and what lies behind the policies and programmes they have designed in response. The McGuinty government worked tirelessly to build a sense of shared understanding and common purpose among key stakeholder groups, and consequently their two major systemic initiatives – the Literacy and Numeracy Secretariat and the Student Success strategy – enjoyed broad public understanding and support.

### ▪ Teacher and principal quality

Ontario's reforms rested heavily on the confidence the government had in the quality of the province's teaching force. The decision by the Literacy and Numeracy Secretariat not to follow England's "informed prescription" model, but instead to put seed money into the field to encourage local experimentation and innovation, sent a strong signal that teacher-generated solutions to weaknesses in reading and mathematics performance were likely to be more successful than solutions imposed from above. The fact that teaching has historically been a respected profession in Canada, and continues to draw its candidates from the top third of secondary school graduates, meant that the government had a solid basis for believing that its trust would pay off. Given the "teacher-bashing" engaged in by the previous government, this show of trust in the competence and professionalism of the teaching force was an essential ingredient in repairing the rupture that had developed between the profession and the government.

Ontario has paid special attention to leadership development, especially for school principals. In 2008 the government initiated the Ontario Leadership Strategy that spells out the skills, knowledge and attributes of effective leaders. Among the elements of the strategy are a strong mentoring programme that has now reached over 4 500 principals and vice-principals, and a new province-wide appraisal programme for school leaders.

### ▪ A single capable centre with authority and legitimacy to act

The Ontario story is very much one of strong central leadership coupled with a major investment in capacity-building and trust-building in the field. The combination of skilled, sustained political leadership from the Premier and a succession of capable ministers, and very strong professional leadership from the Deputy Education Minister account for a big part of Ontario's success. While the initial decision to create the Literacy and Numeracy Secretariat outside the bureaucracy suggests that the political leadership did not have confidence that the ministry could carry out such an ambitious, high-profile initiative, one of the Deputy Education Minister's key goals was to make the department more attentive and responsive to the field. By all accounts he and his successors have made progress in that regard.

### ▪ Professional accountability

Ontario has managed to balance administrative and professional accountability in an admirable fashion. The McGuinty government made no attempt to dismantle or weaken the assessment regime put in place by the previous



government, and it has consistently communicated the message to the field and the public that results matter, as defined by performance on the provincial assessments. However, its response to weak performance has consistently been intervention and support, not blame and punishment. One of its major successes in the early years was to reduce dramatically the number of low-performing schools, not by threatening to close them (as often happens in the US), but by flooding the schools with technical assistance and support. The underlying assumption of Ontario's leaders seems to be that teachers are professionals who are trying to do the right thing, and that performance problems are much more likely to be a product of lack of knowledge than lack of motivation. Consequently, teachers seem to take more responsibility for performance than is often the case in countries with a more punitive approach to external accountability.

## WHERE IS CANADA ON THE EDUCATIONAL CONTINUUM?

Canada is an interesting case. It is more reliant than many advanced industrial countries on commodities and agricultural production. Yet it can certainly be counted among the most advanced of the industrial nations, especially its four most populous provinces. Though it has more natural resources than most industrial countries, it confounds predictions in its firm conviction that high education levels for everyone are essential to its economic future. In that sense it looks very like Finland and Singapore (Chapters 5 and 7), despite a very different economic profile.

Similarly, Canada fits the education profile of a country that is counting on its human resources for its prosperity. It recruits its teachers from the top third of the cohort. It seems, at least from the example of Ontario, to have struck a nice balance between a top-down and bottom-up approach to reform. It has clearly moved as far as any other nation towards trusting its teachers and treating them like professionals. While schools have a fair amount of discretion, they operate within a clear provincial framework of standards, assessments and accountability. In some ways the system is quite traditionally organised. Students are tracked by ability, and yet there seems to be a strong focus on students most at-risk of failure, as evidenced especially by the Student Success Initiative. In that sense, Canada has adopted the view that its future cannot be assured unless all students are performing at high levels and it has specific policies designed to assure that outcome. Canada's post-secondary enrolment rates are now among the highest in the OECD community (Annex 3.A), a clear reflection of the growing public realisation that education beyond high school will be increasingly essential in a knowledge-based economy.

## FINAL OBSERVATIONS

Canada demonstrates, rather surprisingly, that success can be achieved without a national strategy. This observation runs counter to the instincts of many of those who sit in policy seats and seek to effect change, but the fact is that Canada has achieved success on PISA across its provinces despite a limited to non-existent federal role. The best explanation for this is that different jurisdictions will tend to blend in with one another. The power of ideas and the possibilities of diffusion can therefore be sufficient to generate good practice. Ironically, some Canadian leaders, including Gerard Kennedy, are now trying to mount a more national strategy, arguing that education is too important to be left entirely to the provinces.

A second observation is that too often in education policy discussions the choices are frequently framed as reform *versus* the *status quo*. The implicit idea is that there are two sides: external reformers who are pushing for progress; and existing forces – primarily teachers, administrators and unions – who are resistant. The Canadian experience suggests a more complex analysis, in which teachers are a crucial constituency who can be enlisted in a broad reform agenda. Ironically, the more they perceive the state as the hammer, the more likely they are to entrench themselves into a unionised rather than a professional association. The Ontario experience suggests instead that by treating teachers as professionals, and including them at the table, they were able to build considerable goodwill – a critical resource for long-term and sustainable change. This is not to imply that the government was naïve – it was quite aware of the standard discussion points of union negotiations, but the government was able to direct that energy towards win-win issues like providing more professional development time. Ultimately, the Ontario government created a sustainable strategy and a clear push for improved performance in a way that included teachers, rather than alienated them.

■ Figure 3.2 ■  
Canada: Profile data

Language(s)	English and French <sup>5</sup>
Population	32 934 166 (2007) <sup>6</sup> (12th largest in OECD) 13 210 667 (Ontario) <sup>7</sup>
Youth population	16.7% <sup>8</sup> (OECD average 18.7%)
Elderly population	13.6% <sup>9</sup> (OECD average 14.4%)
Growth rate	1 <sup>10</sup> (OECD 0.68%) <sup>11</sup>
Foreign-born population	20% <sup>12</sup> (OECD average 12.9%)
GDP per capita	USD 38 975 <sup>13</sup> (OECD average 33 732) <sup>14</sup>
Economy-Origin of GDP	Other: 66.4%; Manufacturing: 15.8%; Construction: 6.3%; Public Administration: 5.6%; Mining and quarrying: 3.6%; Agriculture: 2.3% <sup>15</sup>
Unemployment	6.1% (2008) <sup>16</sup> (OECD average 6.1%) <sup>17</sup>
Youth unemployment	11.6% (2008) (OECD average 13.8%) <sup>18</sup>
Expenditure on education	4.9% of GDP (OECD average 5.2%) 3.1% on primary, secondary and post-secondary non-tertiary 1.8% on tertiary <sup>19</sup> education <sup>20</sup> (OECD average 3.5%; 1.2% respectively) 12.3% of total government expenditure (OECD average 13.3%) 7.8% on primary, secondary and post-secondary non-tertiary 4.5% on tertiary education <sup>21</sup> (OECD average 9%; 3.1% respectively)
Enrolment rate, early childhood education	70.5% <sup>22</sup> (OECD average 71.5%) <sup>23</sup>
Enrolment rate, primary education	106.2% <sup>24</sup> (OECD average 98.8%) <sup>25</sup>
Enrolment rate, secondary education	80.2% <sup>26</sup> (OECD average 81.5%) <sup>27</sup>
Enrolment rate, tertiary education	25.4%* <sup>28</sup> (OECD average 24.9%) <sup>29</sup>
Students in primary education, by type of institution or mode of enrolment <sup>30</sup>	Public* (OECD average 89.6%) Government-dependent private* (OECD average 8.1%) Independent, private* (OECD average 2.9%)
Students in lower secondary education, by type of institution or mode of enrolment <sup>31</sup>	Public 94.2% (OECD average 83.2%) Government-dependent private (included in "public" figure) (OECD average 10.9%) Independent, private (included in "public" figure) (OECD average 3.5%)
Students in upper secondary education, by type of institution or mode of enrolment <sup>32</sup>	Public: 94.2% (OECD average 82%) Government-dependent private (included in "public" figure) (OECD average 13.6%) Independent, private (included in "public" figure) (OECD average 5.5%)
Students in tertiary education, by type of institution or mode of enrolment <sup>33</sup>	Tertiary type B education: missing data <sup>34</sup> (OECD average Public: 61.8%) Government-dependent private: 19.2% Independent-private: 16.6%)  Tertiary type A education: missing data <sup>35</sup> (OECD average Public: 77.1%) Government-dependent private: 9.6% Independent-private: 15%)
Teachers' salaries	Average annual starting salary in lower secondary education: missing data* (OECD average USD 30 750) <sup>36</sup> Ratio of salary in lower secondary education after 15 years of experience to GDP per capita: missing data (OECD average: 1.22)
Upper secondary graduation rates	76% (OECD average 80%) <sup>37</sup>

\*Data on institutional breakdown and Canadian teachers' salaries missing from *Education at a Glance 2010* (OECD, 2010).

StatLink  <http://dx.doi.org/10.1787/888932366655>

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## Notes

1. "Tight-loose" refers to a theory of management where the central unit is "tight" or specific and uncompromising on the ends it seeks, but "loose" or flexible on the means that those closer to the ground take to achieving those ends.
2. Statistics Canada, "Report on the Demographic Situation of Canada," Table A-4,1, accessed online at [www.statcan.gc.ca/pub/91-209-x/2004000/part1/ta4-1-eng.htm](http://www.statcan.gc.ca/pub/91-209-x/2004000/part1/ta4-1-eng.htm).
3. Statistics Canada, "Facts and Figures 2008: Immigration Overview," accessed online at [www.cic.gc.ca/english/resources/statistics/facts2008/permanent/01.asp](http://www.cic.gc.ca/english/resources/statistics/facts2008/permanent/01.asp).
4. For a comparative international look at accountability, see Supovitz, (2009).
5. OECD (2008), *OECD Economic Surveys: Canada*, OECD Publishing.
6. OECD (2008), *OECD Economic Surveys: Canada*, OECD Publishing.
7. [www.statcan.gc.ca](http://www.statcan.gc.ca). Data from 2010.
8. *OECD Factbook 2010*, OECD Publishing. Ratio of population aged less than 15 to the total population (data from 2008).
9. *OECD Factbook 2010*, OECD Publishing. Ratio of population aged 65 and older to the total population (data from 2008).
10. OECD (2008), *Jobs for Youth Canada*, OECD Publishing. Ontario's population growth depends largely on immigration. Ontario, Alberta and British Columbia are the only provinces in which the projected average annual growth would exceed the growth rate for Canada as a whole.
11. *OECD Factbook 2010*, OECD Publishing. Annual population growth in percentage, OECD total (year of reference – 2007).
12. *OECD Factbook 2010*, OECD Publishing. Foreign-born population as percent of the total population (data from 2007).
13. *OECD Factbook 2010*, OECD Publishing. Current prices and PPPs (data from 2008).
14. *OECD Factbook 2010*, OECD Publishing. Current prices and PPPs (data from 2008).
15. OECD (2008), *OECD Economic Surveys: Canada*, OECD Publishing. Origin of GDP, percent of total (data from 2006).
16. *OECD Factbook 2010*, OECD Publishing. Total unemployment rates as percentage of total labour force (data from 2008).
17. *OECD Factbook 2010*, OECD Publishing. Total unemployment rates as percentage of total labour force (data from 2008).
18. OECD (2010), *Employment Outlook*, OECD Publishing. Unemployed as a percentage of the labour force in the age group: youth aged 15-24.
19. The OECD follows standard international conventions in using the term "tertiary education" to refer to all post-secondary programmes at ISCED levels 5B, 5A and 6, regardless of the institutions in which they are offered. OECD (2008), *Tertiary Education for the Knowledge Society: Volume 1*, OECD Publishing.
20. OECD (2010), *Education at a Glance 2010*, OECD Publishing. Public expenditure presented in this table includes public subsidies to households for living costs (scholarships and grants to students/households and students loans), which are not spent on educational institutions (data from 2006).
21. OECD (2010), *Education at a Glance 2010*, OECD Publishing. Public expenditure presented in this table includes public subsidies to households for living costs (scholarships and grants to students/households and students loans), which are not spent on educational institutions (data from 2006).
22. UNESCO Institute for Statistics, <http://data.worldbank.org/country>, Gross enrolment ratio (data from 2006).
23. OECD (2010), *Education at a Glance 2010*, OECD Publishing. OECD average net enrolment rates of ages 4 and under as a percentage of the population aged 3 to 4 (year of reference – 2008).
24. <http://data.worldbank.org/country>, Gross enrolment ratio (data from 2007).
25. OECD (2010), *Education at a Glance 2010*, OECD Publishing. OECD average net enrolment rates of ages 5 to 14 as a percentage of the population aged 5 to 14 (year of reference – 2008).
26. OECD (2010), *Education at a Glance 2010*, OECD Publishing. Net enrolment rates of ages 15 to 19 as a percentage of the population aged 15 to 19 (data from 2007).
27. OECD (2010), *Education at a Glance 2010*, OECD Publishing. OECD average net enrolment rates of ages 15 to 19 as a percentage of the population aged 15 to 19 (year of reference – 2008).



28. OECD (2010), *Education at a Glance 2010*, OECD Publishing. Net enrolment rates of ages 20 to 29 as a percentage of the population aged 20 to 29 (data from 2007). This figure includes includes all 20-29 year olds, including those in employment, etc. The Gross Enrolment Ratio (GER), measured by the UN as the number of actual students enrolled / number of potential students enrolled, is generally higher. The GER for tertiary education in Canada in 2002 is 60%, compared to the regional avg of 70% (UIS 2010).
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32. OECD (2010), *Education at a Glance 2010*, OECD Publishing. Data from 2008.
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34. Data missing from *Education at a Glance 2010* (OECD, 2010)
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36. OECD (2010), *Education at a Glance 2010*, OECD Publishing. Starting salary/minimum training in USD adjusted for PPP (data from 2008).
37. OECD (2010), *Education at a Glance 2010*, OECD Publishing. Sum of upper secondary graduation rates for a single year of age in 2007 (year of reference for OECD average – 2008).