Cost Estimates of Dropping Out of High School in Canada

EXECUTIVE SUMMARY

Olena Hankivsky
Simon Fraser University
December 2008

Prepared for:

CANADIAN COUNCIL ON LEARNING
CCL CCA
CONSEIL CANADIEN SUR L'APPRENTISSAGE

This work was funded by a contribution from the Canadian Council on Learning.

Executive Summary

In Canada, as in other jurisdictions, an "adequate education" is generally considered at minimum to include a high school diploma. Since the 1990s, increasing high school completion[1] rates has been identified as a key policy priority, essential to the future productivity of the Canadian economy.

It is generally accepted that high school completion benefits individuals and Canadian society as a whole (Canadian Council on Learning, 2007). Similarly, the OECD's *Education at a Glance 2006* reports that "[e]vidence of the public and private benefits of education is growing" (2006a: 4). Awareness of the various negative consequences of low educational attainment is also increasing. A growing body of evidence is demonstrating that dropping out of high school is a major social problem that can often have devastating effects. Indeed, as Oreopoulos argues, "…high school drop-outs fare much worse later in life than those who obtain more education" (2005, p. 1).

Despite advances in knowledge made to date, few people recognize the full extent to which low educational attainment affects society. Educational inequity is an issue of justice and fairness; however, it is also an issue with significant economic costs to the state, which are associated with lost opportunities for those who fail to complete high school.

Directly or indirectly, high school non-completion has enormous fiscal implications in terms of expenditures on health, social services and programs, education, employment, criminality, and lower economic productivity. As Levin et al. observe: "An individual's educational attainment is one of the most important determinants of their life chances in terms of employment, income, health status, housing and many other amenities" (Levin, Belfield, Meunnig & Rouse, 2007, p. 2).

The goal of this study is to present a portrait of economic costs—to the state and to the individual—associated with high school non-completion in Canada. Accordingly, the single variable—failure to graduate high school—is examined across a variety of related policy sectors.

Methodology

This research draws on the methodology used by a collection of US studies that examine the financial costs to society of high school non-completion (Levin et al., 2007; Levin, 2005). This study presents annual and lifetime (aggregate) tangible costs—to the individual and to the state—associated with high school non-completion in the areas of health, social assistance, crime, labour and employment. However, it should be noted that not each cost category is available for all policy sectors. In addition, it includes

[1] Throughout this report, high school graduation, high school completion, high school diploma, completion of secondary school are used interchangeably.

intangible costs — that is, the non-market effects of schooling such as pain, suffering and reduced quality of life — using the well-established methods of Haveman and Wolfe (1984). All cost estimates are presented in 2008 dollars.

While aspects of the public (state) and private (individual) costs and returns on high school education have been previously calculated in Canada, the revised and new data presented in this study are made possible because of numerous research advances. First, the relationship between education and a variety of social outcomes is now better understood. As one example, in Canada and elsewhere, recent studies have concluded that the causal impacts of education on income may be larger than previously believed (Riddell, 2006). Second, estimations of high school dropout rates have become more accurate. Finally, costing methodologies have evolved, especially in the US context, to increase the reliability of data interpretations and related economic calculations.

Limitations

Because most government data used in costing studies are not specifically designed for such purposes and because there are always gaps in available research, a number of assumptions were made in the final cost calculations. These are clearly laid out with respect to each policy sector discussed in the report. It is especially important to note that in the cost category areas of health and crime, important costs were excluded due to research and data limitations. For example, in terms of health, it was not possible to calculate direct, annual public health costs; and in the area of crime, following the methodology of Moretti and Lochner (2004), costs were not calculated for the female population.

Another challenge in costing is "to fully identify the causal impact of education on various outcomes" (HRDC, 2000, p. 43). The issue of causality is addressed by drawing on a broad base of literature, rigorous scientific evidence, and leading-edge costing methodologies in the field of educational attainment. When possible, costs were calculated using the latest available Census (2001) and the Survey of Labour and Income Dynamics (2004); however, where it was possible to do so, final calculations were based on Census data. We turned to leading studies in determining the private and public rates of return in labour and employment for the purposes of comparison. However, in all final calculations, only the most conservative cost calculations were used.

Table 1: Estimated Tangible Costs of High School Non-Completion in Canada (2008 dollars)

	Estimated cost per dropout		Aggregated total in Canada	
	Annual	**Lifetime**	**Annual**	**Lifetime**
Tangible Costs				
Health (private[a])	$8,098	$211,471[b]	$23.8 billion	$623 billion[b]
Social Assistance (public)	$4,230		$969 million	
Crime (public)	$224		$350 million	
Labour and Employment				
Earning loss (private)	$3,491	$104,222[c]	$10.3 billion	$307 billion[c]
Tax revenue loss (public)	$226	$6,882	$378 million	$11.5 billion
Revenue loss in employment insurance premium (public)	$68	$2,063	$201 million	$6.1 billion
Employment insurance cost (public)	$2,767		$1.1 billion	

[a] Data on public costs are not available.
[b] "Lifetime" costs related to health reflect costs over a span of 35 years.
[c] "Lifetime" costs related to income reflect earning loss over a 35-year span (assuming lifetime earnings start from age 20 through 54)

Where possible, throughout the report, costs have been broken down by province, gender and Aboriginal status. Although it would have been ideal to provide a breakdown of costs associated with other populations (e.g. those living in rural areas, special needs persons and immigrants) in order to identify where educational interventions may be most effective, data limitations prevented such disaggregation.

ESTIMATED SAVINGS ACHIEVED IF THE CANADIAN POPULATION HAD ONE-PERCENTAGE-POINT MORE HIGH SCHOOL GRADUATES

An ideal policy outcome would be that all Canadians, including those most at risk, complete high school. However, even an increase in the number of Canadians with a high school diploma equivalent to 1 percent of the Canadian population would result in considerable cost savings both to the state and to individuals. This number of additional high school graduates would be 332,901 (0.01 * 33,290,133[2] = 332,901.33).

In short, these calculations suggest that the costs of dropping out borne by individuals and society are considerable and that significant savings could be made by increasing Canada's number of high school graduates even by a small fraction. Cost savings in

[2] The Canadian population in 2008 was 33,290,133 (CANSIM, V466674 Canada).

other categories are estimated in a similar fashion and are listed in the second column of the table below.

Table 2: Estimated Savings Achieved if the Canadian Population had One Percentage-Point More High School Graduates (2008 dollars)

	Estimated cost per dropout		Estimated Savings Achieved if the Canadian Population had One Percentage-Point More High School Graduates (2008 dollars)	
	Annual	**Lifetime**	**Annual**	**Lifetime**
Tangible Costs				
Health (private[a])	$8,098	$211,471	$2.3 billion	$70 billion
Social Assistance (public)	$4,230		$1.4 billion	
Crime (public)	$224		$74 million	
Labour and Employment				
Earning loss (private)	$3,491	$104,222	$1.2 billion	$34 billion
Tax revenue loss (public)	$226	$6,882	$75 million	$2.3 billion
Revenue loss in employment insurance premium (public)	$68	$2,063	$22 million	$686 million
Employment insurance cost (public)	$2,767		$921 million	

An estimate of overall cost savings in 2008 resulting from a one-percentage-point increase in the Canadian graduation rate can be obtained by adding only the cost savings for the categories for which "per dropout" costs are annual (e.g. social assistance, crime, annual earning loss, annual tax revenue loss, annual revenue loss in employment insurance, employment insurance cost, and intangible costs). The aggregate estimated cost savings to Canada would be over $7.7 billion for 2008.

The findings in this report represent the most accurate and up-to-date estimates possible. Despite the acknowledged data gaps, these findings reveal the negative repercussions to the country's economic, social and civic fabric that result from inadequate educational attainment; and underscore the need for comprehensive, proactive solutions. In so doing, this research contributes to the existing body of knowledge in two key ways. First, it transcends previous studies by striving to calculate, in a more complete fashion, public and private costs. Second, this study is more comprehensive in that it considers costs in a variety of policy sectors, whereas most studies in the Canadian context have focused primarily on income earnings (HRDC, 2000). The way in which outcomes associated with high school non-completion are

perceived, framed, measured, and quantified have direct consequences for education and public policy.