The Economic and Social Payoffs of Full Day Early Learning

An economic analysis of the recommendations of *With Our Best Future in Mind*

SUMMARY

An economic impact study by the Centre for Spatial Economics (C4SE) finds that Ontario will benefit in both the short- and long-term as full day early learning becomes available in Ontario schools. The analysis prepared by economist Robert Fairholm found the plan to invest in full day schooling for four- and five-year-olds delivers an immediate return of $2.02 for every $1 invested in operations and $1.47 for every $1 invested in capital infrastructure[1].

The study also found that full time schooling for youngsters is an effective job creator: Every $1-million invested in operations results in 29.3 jobs; every $1-million for new and renovated classrooms produces 20.1 jobs.

Medium- and longer-term economic impacts are measured in terms of the benefits for children and their parents (primarily mothers) against the cost of the program. Here the study found that every $1 invested in early learning generates benefits of $2.42 for the province through increased earnings, improved health outcomes and reduced social costs.

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PURPOSE OF THE STUDY

In 2007 the Ontario government committed to build on its Best Start[2] strategy by offering a full-day learning program for four- and five-year-old children. In the same year, the Premier charged Charles Pascal with developing an implementation plan. The resulting strategy, detailed in the report *With Our Best Future in Mind*[3], brings together the current array of child care, family support services and education under one program and policy roof[4].

The Pascal report recommends spending up to $1-billion annually to cover the costs of a full school day for kindergarten-aged children. An additional $1.7-billion would be used to upgrade or build new classrooms to accommodate the full time attendance of approximately 250,000 youngsters.

Where demand is sufficient school boards would offer after-school and summer programming for children 4 to 12 years on a cost recovery basis.

As schools pick up the care of older children all savings to the

1. The study also presents data for GTA and City of Toronto.
2. Introduced in 2004, Best Start was designed to create a comprehensive and continuous service system for children from the prenatal period through elementary school.
3. http://www.ontario.ca/en/initiatives/early_learning/ONT06_018937.pdf
4. A new Early Years Division, within the Ministry of Education, would oversee policy, programming and funding for both the education and care of children from 0-8 years.

public child care budget would be redirected into Child and Family Centres[5] serving younger children and their families.

Having schools offer both child care and education makes more efficient use of an existing public infrastructure and would relieve children and parents of the daily stressors involved in fitting multiple care arrangements around the school's schedule. The parents of kindergarten-aged children could also look forward to lower child care costs, at least during the school year, the report anticipated.

Unfortunately the report was released as the world economy entered a deep recession. Ontario faced a large deficit. The proposals were criticized as expensive and impractical. To allow for a reasoned discussion the Atkinson Charitable Foundation commissioned C4SE to provide an unbiased assessment of the economic impact of the report's recommendations.

COST/BENEFIT ANALYSIS

Outline of the C4SE study

Considerable scientific research[6] documents the positive outcomes of quality early childhood programs on the participants' future health, learning and behaviors. Yet child care and early learning have only recently become a subject of serious research as an important economic and wealth generating activity. The C4SE study analyzes both the immediate stimulus to the provincial economy as well as the longer-term individual and social benefits derived from improved education and health outcomes.

Consistent with other studies and the methodology used by governments in assessing the impact of public investments on economic activity, C4SE employs an input/output model that simulates the impact of capital and operating investments in early learning as proposed in the Pascal report.

Many of the recommendations in the report focus on the reorganization of service planning, management and delivery as a necessary precondition to future funding enhancements. It is assumed such service integration would generate ongoing efficiencies but this is not factored in the economic impact analysis leading to an overall result that is on the conservative side.

The C4SE study consists of two separate analyses. The first analysis focuses on the short-term impact on the Ontario economy, and provides a snapshot of the economic implications for the Greater Toronto Area (GTA). The second focuses on the longer term societal benefits of investing in early learning as a child development and family support program.

Short-Term Economic Stimulus Effects

The short-term effects are the direct result of an increase in operating and capital spending on full day early learning as well as a projected increase in the utilization of school board offered extended-day and summer programming. Pascal estimated one time capital expenditures amortized over 25 years at $1.7-billion to build 2,500 new kindergarten classrooms and renovate 1,700 existing classrooms to create more

EXPLAINING THE MULTIPLIER EFFECTS

Multipliers reflect the rise in overall economic activity as result of an increase in expenditure in a sector by $1.

Multipliers can be presented in a variety of ways; the C4SE study uses a GDP multiplier that reflects the increase in value added (GDP) for every $1 of additional investment in early learning.

The employment multiplier measures the number of jobs created by an additional $1 million of spending in a sector.

Multipliers are classified as

- DIRECT – reflects increase in GDP or the number of jobs created by investing in the target industry.
- INDIRECT – additional GDP increase or the number of jobs resulting from increased requirements of the targeted industry for goods and services.
- INDUCED – workers hired through new investment result in a rise in wages and personal spending, which results in additional GDP and job growth throughout the economy.

Due to varying degrees of labour intensity, wage structure and nature of the industry sectors, the multipliers can vary widely. For example, using Statistics Canada Input/output model, the C4SE study shows a much higher GDP and employment multipliers (returns) for early learning and child care than for capital expenditures associated with building new kindergarten classrooms.

5. Child and Family Centres combine existing child care, family support and intervention services into a single service delivery model under the systems management of municipalities.
6. For the summary of the evidence accompanying the report see: http://www.ontario.ca/ontprodconsume/groups/content/@onca/documents/document/ont06_018937.pdf

appropriate environments for young children. Annual staffing and operating costs were estimated at approximately $1-billion.

The short-term impacts are usually expressed as "multipliers" that measure the employment and economic impacts for certain kinds of investments. The C4SE study finds a direct, indirect and induced increase of GDP that totals $2.02 for every $1 in increased expenditures[7]. The increased spending also results in the direct, indirect and induced creation of 29.3 jobs per million dollars of expenditure. This return on investment compares favourably with stimulus spending in other sectors.

Long-term Impacts

The long-term effects of early childhood programming have been studied for several decades; the research is extensive and usually focuses on societal economic benefits expressed through improved outcomes for children and parents[8].

The C4SE study segregates the impacts on children from the impacts on parents (primarily mothers) to examine where the benefits accrue.

The child effects are seen primarily through improved educational achievement –fewer grade repetitions, less draw on special education and lower high school drop-out rates – which results in more students attending post-secondary education, bringing an increase in future employment earnings. Benefits from improved health outcomes such as lower smoking rates are also significant. Parents, primarily mothers, gain from a stronger labour force attachment and, in some cases, higher educational attainment, both of which increase parental earnings.

Because the C4SE study builds on the results of the Abecederian program in North Carolina which focuses on disadvantaged children, appropriate adjustments had to be made to reflect the universal nature of early learning and child care proposed for Ontario. While the effects are measured on an individual level (usually in terms of the net benefit per hour of participation in an early childhood program), the benefits are accrued to the society as a whole. Increased educational attainment, improved health outcomes, enhanced labour force attachment and other effects reduce social costs and contribute to overall economic well-being.

Consistent with other studies of a similar nature , the C4SE analysis shows that for every $1 Ontario invests in its new early learning and care plan it benefits by $2.42 through increased economic activity. Higher tax revenue is generated by the enhanced employment earnings of parents today and their children tomorrow. Benefits are also derived from reduced social and health costs both in the short and longer term.

LONG-TERM ECONOMIC IMPACTS OF FULL DAY LEARNING

• Hourly costs	$5.52	• Hourly benefits -parents	$7.69
• Less Hourly savings (informal care)	$1.57	• Plus Hourly benefits -children	$1.88
HOURLY NET COSTS	$3.95	HOURLY BENEFITS	$9.56

RATIO OF BENEFITS TO COST: $2.42

7. Other US and Canadian studies find multiplier effects that are similar to those found in this study; for example see Warner, Ribeiro and Smith (2003), Warner and Liu (2004), Prentice (2008) and Fairholm (2009).
8. For a recent literature review see Fairholm (2009).

BENEFIT ESTIMATES ARE CONSERVATIVE

Insufficient Data

Insufficient information makes it impossible to quantify all the associated costs and benefits of the Pascal recommendations. Not included was the potential impact of the universal assessment of children at 18 months as an opportunity for the early detection and response to developmental challenges in children and the identification of families who may benefit from additional resources.

Also, while the "one door" feature of the proposed Child and Family Centres clearly represents improved efficiencies in service delivery, there isn't enough information to quantify what those efficiencies might be. Similarly, there is insufficient information to quantify all of the potential long-term benefits to children from providing extended day/year programming.

The scope of the C4SE analysis does not permit consideration of how expanded access to early learning and child care could potentially reduce social assistance cost. Limited child care is a major barrier to parents leaving social assistance. It can be assumed the benefits from improved access would be high. The total cost for a four year old enrolled in an extended day/full year program is 60% of the cost of social assistance.

The report's proposal for a substantially revised parental leave program was also not included in the calculations.

Limited child care is a major barrier to parents leaving social assistance

CURRENT IMPLEMENTATIONS

The C4SE study considers the cost-benefits of the central recommendations of the Pascal report: a school-board delivered seamless full day/full year learning program for four- and five-year olds; extended day and year round programming for 6 to 12 year olds also offered by school boards, and the reinvestment of child care savings to expand access to community programs for children pre-natal to three years old. If these elements are not fully in place the benefits are reduced.

New legislation[10] allows school boards to offer year round programming but at least for 2010-11, there is no coverage for non-school days. In limited situations where extended hours are offered on school days, high parent fees have kept enrolment low. Low enrolment contributes to higher costs per child, negating the ability to redirect funding to stabilize and expand services for younger children.

Affordable parent fees, and year round programming determine whether children are able to participate and consequently whether or not mothers work – two elements that deliver many of the plan's economic benefits.

If "full day learning" becomes stuck at "full day kindergarten" and the transistions between school and ad hoc child care arrangements persist, many of the child development advantages will also be reduced, particularly for children with developmental risks.

Similarly for older children, the absence of summer and after-school programming has been found to increase the learning gap between those from low-income families and their better off counterparts.

It is difficult to determine whether the current implementation represents an ultimate change in direction or is just an expression of growing pains associated with a radical system makeover. Nevertheless, even in the short term, opportunities for significant economic benefits are being missed.

CONCLUSION

During difficult economic times investments that provide society with above average returns in the short and long term clearly deserve priority

9. For Canada, Fairholm (2009) found that the net present value of benefits to be 2.54 per dollar invested and Cleveland and Krashinsky (1998) estimated high quality child care in Canada would return over $2 for every dollar invested. For the US, Karoly and Bigelow (2005) estimated that a universal child care program in California would yield benefits of $2-$4 for every dollar invested, and Belfield (2005) estimated that every dollar invested provides future benefits worth $2.25 for the Louisiana child care system.
10. Bill 242, The Full Day Learning Statute Amendment Act, 2010

> According to the C4SE authors: The implementation of the proposals laid out in the Pascal report will have significant short, medium and long-term economic implications. The short-term stimulus from these proposals would be in the order of 2.02 per dollar spent for the operation of the system, and 1.47 for the capital spending. Combined these effects are worth 1.87 per dollar of spending in 2012-13. This level of multiplier is above the stimulus to the economy from the expansion of most other industries and is above the short-term impact on the economy from an increase in taxes to pay for these proposals.
>
> Pascal's proposals would also increase the number of children receiving early learning by an estimated 139,200. The more children receiving quality education the greater the long-term benefits are to society. The long-term benefits to the economy are estimated to exceed costs by a factor of around 2.4 for every dollar invested. These short and long-term benefits clearly indicate that the implementation of the Pascal recommendations will benefit the Ontario economy[11].

SHORT-TERM IMPACTS

EARLY LEARNING

Gross Domestic Product multiplier

- 2.02 dollars of increased economic activity per dollar spent

Employment Multiplier

- 29 jobs per million dollars spent

CAPITAL SPENDING

Gross Domestic Product multiplier

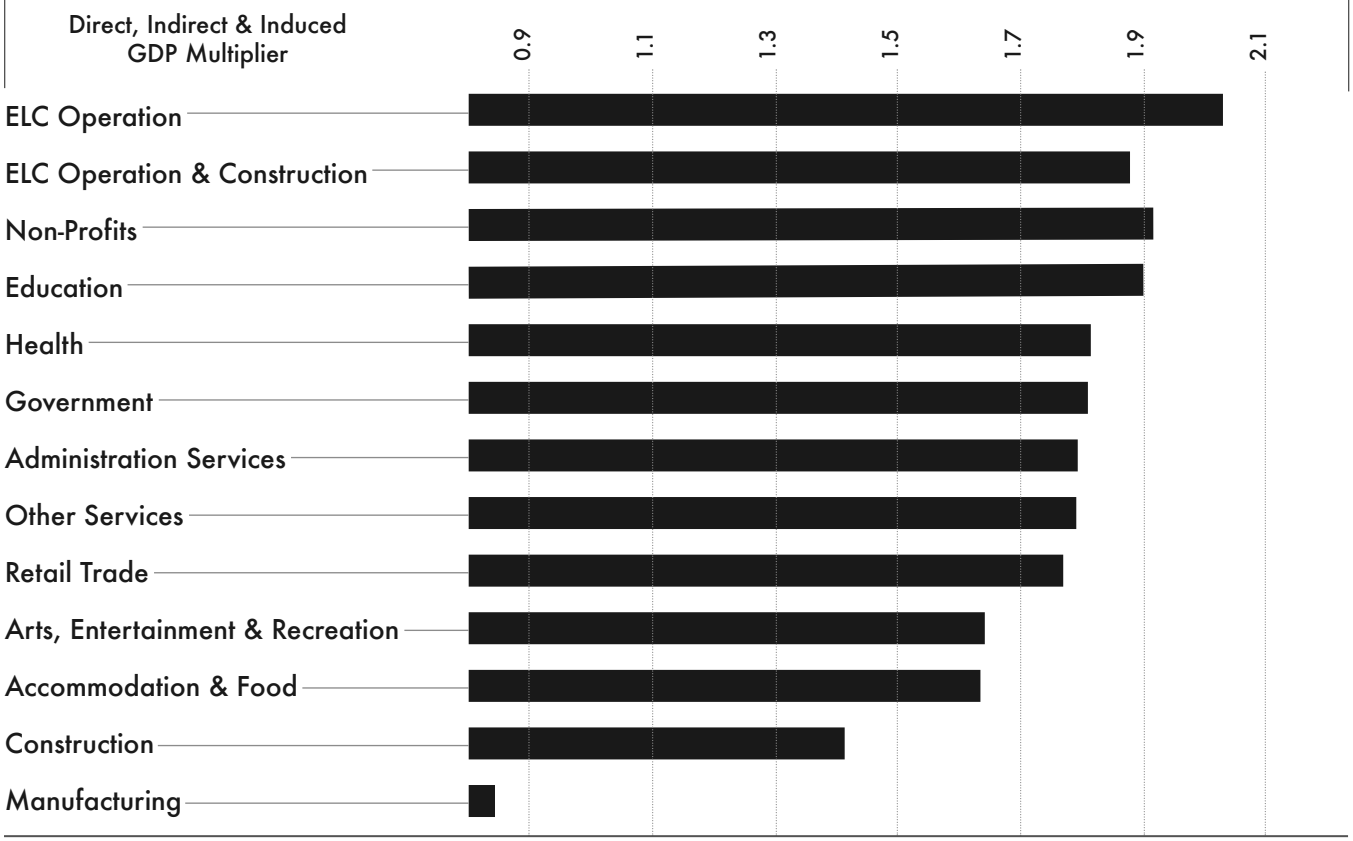
- 1.47 dollars of increased economic activity per dollar spent

Employment Multiplier

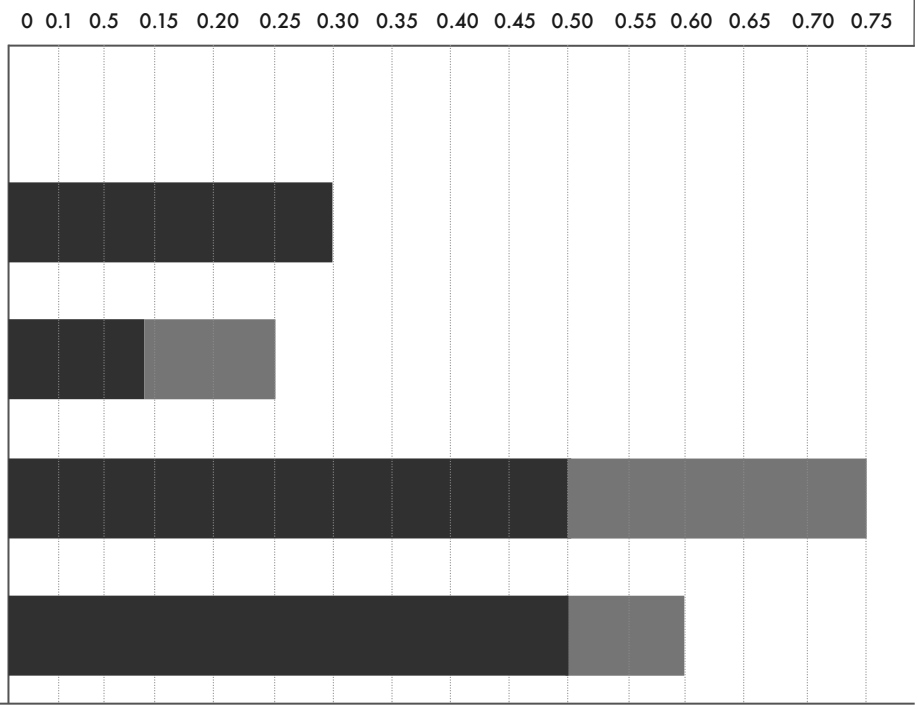
- 20 jobs per million dollars spent

11. The Centre for Spatial Economics, p.20

Short-term Multiplier of ELC>Others



Improved Academic Achievements



- Effective after school programs improve children's academic achievement by 0.3 standard deviation (SD), larger gains for disadvantaged children
- Summer school programs improves academic achievement by 0.14-0.25 SD
- Early identification and intervention improves cogitative development by 0.5-0.75 SD
- Parental involvement improves educational outcomes by 0.5-0.6 SD

Benefits of ELC on Academic Achievement*:

Math and verbal score increases Average Versus Disadvantaged Cohorts

	Math	Verbal	Average Score
Score increase – all children	1.1	1.2	1.1
Score increase – disadvantaged	2.0	2.2	2.1

Benefits of ELC Adjusted to Reflect Average Versus Disadvantaged Cohorts

	ELC Participants	Control	Difference Disadvantaged	Adjusted Difference Average Group
Repeated grade	31%	55%	-44%	-24%
Years in special education	1	1.5	-33%	-18%
Smoking rates	39%	55%	-29%	-16%
High school dropout rate	33%	49%	-33%	-18%
Math score	93	82	13	7%

Source: Loeb et al. (2007)

REFERENCES

• Belfield, C. R. "An Economic Analysis of Pre-K in Louisiana", Pre-K Now, June 2005, pp. 1-16.

• Cleveland, G. and Krashinsky M. "The Benefits and Costs of Good Child Care: the Economic Rationale for Public Investment in Young Children." Toronto, ON: University of Toronto Centre for Urban and Community Studies, Child care Resource and Research Unit, 1998.

• Fairholm, R. "Literature Review of Socioeconomic Effects and Net Benefits – Understanding and Addressing Workforce Shortages in Early Childhood Education and Care (ECEC) Project", Child Care Human Resource Sector Council, 2009

• Karoly, L.A. and J. H. Bigelow. "The Economics of Investing in Universal Preschool Education in California", 2005.

• Pascal C.E.," With Our Best Future in Mind", Government of Ontario, 2009. Available online at: http://www.ontario.ca/en/initiatives/early_learning/ONT06_018872

• Prentice, S. "Rural Childcare in Manitoba: New Economic Evidence", Municipal Leader, pp. 27-29 2008.

• Centre for Spatial Economics, "Early Learning and Care Impact Analysis" available for download from www.oise.utoronto.ca/atkinson/

• Warner, M.E., & Liu, Z., "Regional economic development and local services: The case of child care". International Journal of Economic Development, 7(1):25-64 2005.a

• Warner, M.E., Rosaria Ribeiro and Amy Erica Smith, 2003. "Addressing the Affordability Gap: Framing Child Care as Economic Development," Journal of Afforable Housing and Community Development Law, 12(3):294-313.

• Loeb, S., M. Bridges, D. Bassok, B. Fuller and R. W. Rumberger (2007). "How much is too much? The influence of preschool centers on children's social and cognitive development." Economics of Education Review, 26(1), pp. 52-66

The full C4SE study and accompanying materials are available at www.oise.utoronto.ca/atkinson

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