Lessons Learned from Canada's Surveys of Children & Youth
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How much do we know about Canadian kids today? Quite a lot, as a matter of fact, and we’re learning more all the time. Canada is actively engaged in studying children of all ages through a number of ambitious, ongoing surveys—notably the National Longitudinal Survey of Children and Youth (NLSCY), Understanding the Early Years (UYE), and the Programme for International Student Assessment (PISA).

The articles in this issue of Transition draw from the findings of these and other studies to give a clear picture of the factors that make a difference in children’s lives. In “Neighbourhoods Matter for Child Development,” Clyde Hertzman and Dafna Kohen show how neighbourhoud characteristics influence preschoolers’ behavioural and language development. Besides drawing on NLSCY research, the authors also discuss what they’ve learned from a study of kindergarten children in Vancouver.

The next article, “How Are the Kids?,” focuses on a research initiative called Understanding the Early Years. Through UYE, 12 Canadian communities are assessing the health, well-being, and school-readiness of their local young children, and mapping how close the children live to various child and family resources. We have reports from project coordinators Sarah Henry Gallant of Prince Edward Island and Linda Nosbush of Prince Albert, Saskatchewan.

In “Raising the Learning Bar,” J. Douglas Willms looks at the academic achievements of 15-year-olds in Canada compared to other countries participating in PISA, an international survey of students’ abilities in reading, math, and science. Dr. Willms draws attention to the “large differences between Canadian youth from advantaged and less advantaged backgrounds,” and he offers five strategies aimed at helping all young Canadians reach their potential.

—Donna McCloskey, Editor

Web Sites of Interest

NLSCY: www.hrdc-drhc.gc.ca/nlsacy-elnjej


PISA: Organisation for Economic Cooperation and Development: www.pisa.oecd.org

PISA Canada: www.pisa.gc.ca

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Networks lists events in support of families, especially major events of interest to many readers across Canada. For a free listing, please give the Editor ample notice, and state in what language(s) your event will be conducted. Provide written information in English and French, if available.
Experiences in early childhood influence a person’s health, well-being, and coping skills for their entire life. We now know that a developing child is influenced by many factors, some even before birth. The prenatal environment is critical to healthy development, as is the environment where the child lives, grows up, and interacts. Also essential are sensitive, nurturing care, and developmentally appropriate stimulation.

The quality of support, nurturing, and stimulation depend on the quality of children’s day-to-day experiences where they live and learn. And the quality of these experiences is, in turn, strongly influenced by socio-economic, neighbourhood, and family circumstances—in other words, the broader context in which children develop. Yet it is only recently that researchers have turned their attention to this context.

Thanks to longitudinal studies such as Canada’s National Longitudinal Study of Children and Youth (NLSCY), we know that inequalities in child development emerge in a systematic fashion over the first five years of life, following contours established by family income; parental education; parenting style; neighbourhood safety, cohesion, and socio-economic mix; and access to good child care and family programs.

Why Do Neighbourhoods Matter?

Why should neighbourhoods, in particular, make a difference when it comes to child development? The answer comes from the ecological approach, which emphasizes the importance of viewing lives in context and studying, all together, the multiple contexts that shape child development—including families, schools, peers, and neighbourhoods.

The ecological approach has given rise to several complementary theories as to how neighbourhoods might affect child development. First, parenting behaviours may be transmitted from family to family within a neighbourhood. The influence of neighbourhood characteristics may operate informally through the day-to-day contact of parents, leading to similar parenting styles, domestic arrangements, and parental decisions about participation in preschool programs or child care arrangements.

Second, a neighbourhood with a variety of good resources—such as libraries, playgrounds, preschools, enrichment programs, and child care—promotes child well-being by providing stimulating, enriching activities. These facilities may be of higher quality in affluent or cohesive neighbourhoods where parents may be better at obtaining resources for their children.

Third, the structural characteristics of a neighbourhood, such as its residents’ income and stability, may be important because these characteristics can support or hinder social organization. For instance, in poor, residentially unstable neighbourhoods, social organization is often low, leading to the proliferation of problem behaviours like public drinking and drug use, destruction of property, and other crimes. In such neighbourhoods, children’s emotional and behavioural development may be threatened by living in the midst of physical and social disorder, and by being exposed to community crime.
**What Does the NLSCY Tell Us?**

Canada’s National Longitudinal Study of Children and Youth has allowed us to examine the influence on child development of several neighbourhood socio-economic characteristics such as employment and single parenthood, physical and social disorder, and neighbourhood cohesion.

Our studies began by focussing on developmental markers such as preschoolers’ language and behavioural development. Because we used statistical techniques to separate family influences on child development from neighbourhood effects, the results we describe below are about *neighbourhood* characteristics, *not* the characteristics of the families themselves.

Children’s verbal-ability scores rise with the proportion of affluent families in the neighbourhood. The scores fall as the proportion of poor families or households led by a single mother increases, and as neighbourhood cohesion decreases. Neighbourhood disorder adversely influences children’s language development. Not surprisingly then, a high level of neighbourhood cohesion indirectly improves children’s language development through its positive effects on parental emotional distress, social support, and health.

Behaviour problems are more frequent among children living in neighbourhoods with fewer affluent residents, high unemployment rates, and low cohesion. The influence of neighbourhood on behavioural development is not explained by mothers’ levels of emotional distress, perceived social support, or poor physical health. Neighbourhood physical disorder does not appear to play a role, but neighbourhood cohesion is an important factor over and above maternal emotional distress, social support, and poor health. The neighbourhood effects are also not explained by family socio-economic factors such as household income or size, parents’ education, or whether or not the families are led by single mothers.

Finally, our analyses show that children from both less advantaged families and more advantaged families benefit from living in advantaged neighbourhoods. These findings suggest that neighbourhood advantage acts as a protective factor for children at both high and low socio-economic risk.

The results of studies of young children in Canada and in the United States are quite consistent, overall. This consistency is remarkable since the two countries differ in terms of neighbourhood poverty and the segregation of affluent, middle-income, and poor children.

**How Does All This Play Out in Real Communities?**

In the winter of 2000, all kindergarten children in Vancouver were assessed for their verbal, social, emotional, and physical development. The project was organized by the Human Early Learning Partnership (HELP), an interdisciplinary research network based at the University of British Columbia and involving researchers from four BC universities.

HELP divided the city of Vancouver into 23 social-planning neighbourhoods in order to understand the patterns of children’s school readiness; socio-economic characteristics; neighbourhood safety; early health risks, detection, and intervention; childcare, literacy, and parenting programs; and school performance. What did we learn?

Children’s development varies greatly from one neighbourhood to another in Vancouver. As one goes from the most affluent to the least affluent neighbourhood, the proportion of children who are vulnerable on one or more dimensions of development (language/cognitive, social, emotional, physical, or communication skills) rises from 6% to 38%.

Some children live in neighbourhoods with no poor families, while other children live in neighbourhoods where as many as 81% of the residents are poor.

Similarly, some children live in neighbourhoods where only 14% of the adult population have less than a high school level of education; other children live in neighbourhoods where half the adults fit into this category.

Every year, all over Vancouver, a large percentage of households move. By age nine, only 15% of children born in Vancouver still live in their neighbourhood of birth.

Families with young children (age 0-5) are concentrated in areas of the city closest to commercial districts and transportation zones, rather than in neighbourhoods with parks and green spaces designed for child-rearing. This unfortunate situation is largely due to problems with housing affordability, zoning, and vacancy rates. Also, most of Vancouver’s non-market housing for families (where rents are determined by the residents’ ability to pay) has been built in existing low socio-economic areas—increasing the level of segregation. These are the neighbourhoods with the highest developmental risk for children.

However, Vancouver is also a showpiece for urban forms that support early child development. In two neighbourhoods where middle-class and non-market housing have been carefully mixed together, developmental outcomes are better for *all* children.

Although Vancouver has a rich variety of child care centres and child development programs, funding levels are low, programs unstable, accessibility variable, capacities and population coverage often impossible to determine, and the mix of programs is ad hoc. For instance, there is a tenfold difference in the rates of child care accessibility from one neighbourhood to another across Vancouver (from .09 slots per child to .89 slots per child). Ironically, the least-served neighbourhoods are found in the working-class areas of the east side, where child centres and programs would likely have the greatest developmental benefits.

Neighbourhood factors in Vancouver don’t just influence early child development; they also influence school performance. The effect seems to be particularly marked for “highly competent children”; that is, children who are ahead in their development...
when they begin school. At kindergarten age, in contrast to vulnerable children, there seem to be similar proportions of highly competent children in all Vancouver neighbourhoods, regardless of the characteristics of the neighbourhood. But by Grade 4 this is no longer the case. In less-affluent neighbourhoods, high levels of competence in kindergarten are often not reflected on standardized Grade 4 tests to nearly the extent that they are in more-affluent neighbourhoods. Why has this pattern emerged?

One possibility is that highly competent children in high-vulnerability neighbourhoods are being held back by the academic pace that tends to characterize classrooms with large proportions of vulnerable children, regardless of the quality of instruction. A second possibility is that better teachers may be attracted to higher socio-economic schools and that they are better prepared to meet the special needs of highly competent children. It’s also possible that the effort needed to maintain an adequate pace of learning in the high-vulnerability classrooms leads to teacher burn-out that, in turn, leads either to transfer requests by highly motivated teachers, or to a willingness on the part of less-motivated teachers to stay in the high-vulnerability schools and just “go through the motions.”

Finally, since high-vulnerability neighbourhoods in Vancouver tend to be unusually multi-cultural in character, schools in these areas must manage unusually complex community relations. If they fail to do so effectively, they may damage parent-teacher relations, reduce classroom morale, and slow the pace of learning in the classroom.

From Research to Policy

Child development unfolds in an ecological context and is influenced by child, family, and community factors. From a policy perspective this means that improving child development is not simply a matter of fulfilling service mandates to targeted client populations, but of improving the environments where children grow up, live, and learn. The challenge is one of adopting an environmental perspective when agencies have traditionally understood their role to be limited to providing one-on-one client services.

For example, our work supports recommendations for policies that encourage socio-economically diverse neighbourhoods and that increase community cohesion, trust, and a sense of belonging. These are environmental strategies that complement traditional service-provision strategies.

Creating the conditions for healthy child development calls for a profound degree of inter-sectoral collaboration. The programs, services, and environmental factors that influence children’s development involve federal, provincial, and municipal governments, as well as philanthropies, businesses, neighbourhoods, and families. Some factors—such as how the housing market affects where children grow up—are rarely thought about in this context. For instance, the role that economically mixed neighbourhoods could play in supporting child development seldom enters into zoning decisions.

Our research in Vancouver supports NLSCY findings showing that determinants of child development exist at all levels of society: the family, the neighbourhood, the community and the economy. Clearly then, Canadians need to design a strategy that is not only inter-sectoral but also multi-level, and that has strong local leadership. Ensuring quality care arrangements, increasing neighbourhood safety and cohesion, and protecting neighbourhoods from becoming ghettoized—all require leadership at the municipal and neighbourhood levels.

Policies aimed at improving the neighbourhood conditions of families with young children in low socio-economic neighbourhoods need not harm the most affluent neighbourhoods or the people who live in them. All children benefit from access to environments that are nurturing, stimulating, supportive, caring, and safe. At present, access to these positive places varies directly with socio-economic status. Providing more opportunities for low-income families to be able to live in affluent neighbourhoods ought to improve their children’s outcomes without having a negative impact on affluent children.

Community efforts could focus first on building community cohesion. In a neighbourhood that’s weak, disorganized, and characterized by high rates of mobility, programs for children and families are unlikely to yield maximum benefits. By implementing initiatives that get community members involved—some fairly low-budget, such as block parents and neighbourhood watch—the community can build a sense of belonging and pride. Stable, socially cohesive communities are more likely to develop an effective voice in neighbourhood affairs and decisions, leading to increased member participation and empowerment.

Economic security, affordable housing, and safety are important to the healthy development of Canada’s children, as are high-quality, well-coordinated, integrated services. Community resources such as housing, educational services, health care, child care, after-school programs, and cultural and leisure activities can act as vital supports for children, youth, and their families.

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For more information about the Human Early Learning Partnership (HELP), visit www.earlylearning.ubc.ca.
How Are the Kids?

Communities Find Answers through Understanding the Early Years

Understanding the Early Years is a five-year research initiative involving children, teachers, parents, community agencies, and the government of Canada. Twelve UEY sites in communities from coast to coast are providing much-needed answers to questions about how local children are doing compared to others in Canada, and how best to respond to their needs.

Understanding the Early Years has three components:

- the National Longitudinal Survey of Children and Youth, which looks at their health and well-being;
- the Early Development Instrument, a teacher questionnaire that assesses how ready children are to learn as they enter school; and
- the Community Mapping Study that maps out local child and family resources.

Below, two coordinators working on the UEY project—Linda Nosbush of Prince Albert, Saskatchewan and Sarah Henry Gallant of Prince Edward Island—talk about what they’ve learned so far from this remarkable initiative since its launch in the winter of 1999-2000.
Understanding the Early Years—
in Prince Albert

by Linda Nosbush

How are our children doing?—that’s perhaps the most compelling question a nation can ask. Canadians now have access to more information than ever before about how well our children are doing, thanks to surveys like the National Longitudinal Survey of Children and Youth. And yet, individual communities may distance themselves from national and even provincial scores because they wonder how representative these data are of the children in their community. Once a community distances itself from the data, it’s all too easy to feel removed from the responsibility to take whatever action those results demand.

If, however, questions about children’s development are answered at the neighbourhood and community levels and then seen in their regional and national context, the data are not only more relevant, they also demand local action. With this rationale in mind, Prince Albert launched its Understanding the Early Years initiative three and a half years ago, and our community has been on an exciting journey ever since.

No one would argue with the fact that children’s early years are fundamentally important to their health, well-being and competence. But what exactly enables them to grow and prosper? UEY was designed to explore this question by:

• building knowledge about the early years, particularly the interlocking influences of families, communities, and neighbourhoods;
• monitoring children’s progress; and
• catalyzing community action by honouring the lived experience and wisdom that a community brings to the research data.

It’s a tall order for a five-year study, but it becomes doable by moving forward in phases: baseline development, knowledge exchange, and comparative analysis.

How does it feel to experience UEY in a community, and what have we learned to date? I asked members of our community and this is how they responded.

Understanding the Early Years shows the community where it is doing well, and also where it is facing challenges—but in a way that focuses on its strengths. UEY has increased Prince Albert’s awareness of the complex nature of child development and demonstrated that solutions lie within our community. Using not only UEY research but also new research from across Canada, we have been able to identify our assets, barriers to access, support systems, and gaps in services. We and our partners (government agencies, citizens’ groups and others)

Prince Albert’s Children & Families: A Few Findings

• The children of Prince Albert are healthy and show strong signs of positive development and readiness for learning.
• About 35% of Prince Albert’s families have low incomes, “compared to 25% in Saskatchewan, and 22% in Canada overall. Some 34% of families are of Aboriginal origin, and about 28% of families are headed by a single parent.”
• One surprise is that “many children in low-income areas are faring quite well.”
• Children in Prince Albert scored slightly above the NLSCY national average on positive behaviour, but below the national average on vocabulary and cognitive development.
• As for school readiness as measured by the Early Development Instrument, Prince Albert children had above-average scores in two domains: “social knowledge and competence,” and “communication skills and general knowledge.” They scored below average for “physical health and well-being, emotional health and maturity, and language and cognitive development.” Children in rural areas scored consistently higher than those in urban areas.
• Prince Albert scored high on community indicators of its “levels of social support, social capital, and safety of its neighbourhoods, despite relatively low levels of socio-economic status.”
• “The parents in this community had lower scores on parenting skills” and also on engagement in learning activities at home. “Given this, and the relatively high prevalence of children with behavioural problems, many parents would benefit from parenting courses and other support measures.” Strategies to help them become more engaged would probably improve children’s outcomes.

—adapted from Understanding the Early Years: Early Childhood Development in Prince Albert, Saskatchewan by J. Douglas Willms (April 2002, KSI Research International Inc. and HRDC)
have begun to work together more closely. We realize that we need one another to meet the challenges and, through UEY, we are developing a common language and a process for coming together to build a better future for children.

The comprehensive nature of the data provided by UEY has enabled our community to link a number of key variables. For example, we now recognize that low levels of parental education are related to low engagement of parents with their children in learning-related activities and that this, in turn, affects children’s language and cognitive skills, and their readiness for school. UEY has helped Prince Albert to prioritize its actions because we can see the profound impact that certain variables such as parenting have on children’s well-being. As such, it has become a driving force that causes us to think more deeply about issues and not be quite so prone to judge. Instead, we try to understand why things are the way they are.

UEY has also provided timely data for several provincial initiatives, such as SchoolPLUS (Saskatchewan’s strategy for using schools not only to educate children but also to deliver a wide range of services to them) and KidsFirst (the province’s Early Childhood Development initiative).

Through Understanding the Early Years, we’ve learned how our children are faring in each of Prince Albert’s thirty school neighbourhoods compared to other children in the region and the nation.

As we examined our local data, we became aware of the changing nature of our community. For example, in the last thirty years, the Aboriginal population in this region has grown by 252%, whereas the rest of the population has only grown by 2%. Our mapping study shows that some areas have large numbers of young children and some have relatively few. These facts have caused us and many in the community to rethink how to respond to problems and direct resources more strategically.

People in Prince Albert are developing an understanding of the reasons why developmental outcomes follow the patterns they do; this is particularly evident in the community’s recent ability to focus on the primary determinants of health. For example, there is a renewed interest in housing, early education, and food security (access to adequate food). Last winter Prince Albert became the third community in Canada to develop a Food Charter supporting everyone’s right to safe, nutritious food. Community groups worked together to develop the Charter, and our civic government has endorsed it.

This new capacity has enabled us to talk about socio-economic gradients and to realize that our children’s readiness-to-learn results show a steep gradient. That is, there are huge differences between neighbourhoods in terms of their capacity to help children become ready to learn by the time they start school. Socio-economically, these results were predictable. With the Social Index developed by UEY to indicate the challenges faced by neighbourhoods, we now have data that allows us to better understand what is happening. As a result, we can move towards developing response systems that not only meet the needs of young children and their families but also deal with the underlying issues.

UEY results have enabled our community to look at itself both retrospectively and prospectively:

When we examine the readiness-to-learn data, we get a multi-dimensional sense of our children’s first five years in terms of their health, well-being, and competence. This kind of retrospective analysis allows our community and especially our service sector to carefully examine what needs to be reinforced and what may need to be changed to improve subsequent groups’ developmental outcomes.

In other words, we’ve discovered areas for celebration as well as areas of challenge. Meeting these challenges means, first of all, understanding the reasons behind the results. To do this, people must not only understand their communities but also what affects child development. What has emerged in our community is a powerful understanding of our interconnectedness: we all live, love, learn, and develop as human beings in the shelter of each other. Although the UEY study focuses most specifically on young children (prenatal to age six), this type of analysis causes us to look at the whole community context.

On the other hand, when prospective analysis is done, the community recognizes that these children are still growing and developing in our midst. If we are to optimize their potential, we must both respond to their present needs and anticipate their future needs.
By using both retrospective and prospective analysis, people in Prince Albert have been able to recognize that we must take joint action to respond to the challenges facing our community. Leaving it up to one agency or level of government just won’t work—all levels must be involved. And, because an effective response must be finely tuned to local needs, local involvement is especially important.

Understanding the Early Years is a powerful tool for our community because it has enabled us to learn about our children and ourselves in an environment that celebrates learning and capacity building. We have the evidence we need to make good decisions and to build a stronger, brighter future for all children so that when they ask, Will I be ready for life and for school? we can answer with a resounding Yes!

Linda Nosbush is project coordinator for Understanding the Early Years in Prince Albert.

Understanding the Early Years—
in PEI

by Sarah Henry Gallant

Understanding the Early Years (UEY) provides accurate, detailed, and timely research information to help communities make informed decisions about the best policies and programs for families and young children. Funded by Human Resources Development Canada, UEY in Prince Edward Island is sponsored by the Early Childhood Development Association of PEI, a provincial non-profit organization.

The Understanding the Early Years initiative is taking place at selected sites across Canada at a time when researchers are proving the importance of environmental factors on brain development in children. But the interplay between a community and its children’s development is so complex that it is difficult to study and support. A strength of the UEY initiative is that it builds on extensive data collected by the National Longitudinal Survey of Children and Youth, extending our capacity to understand community factors that influence children’s outcomes.

Because the province of Prince Edward Island is committed to a strategy for healthy child development, UEY staff have been able to work collaboratively with communities and the government to share information about the early development of Island children, to support communities to focus on the early years, and ultimately to improve children’s outcomes.

The PEI site is unique in that it is the only province-wide UEY site. We are therefore in a position to use research evidence to support both the provincial capacity for enhancing early development and smaller community-based initiatives.

What Do We Know about Island Children?

In 2000, there were about 11,080 children aged six or younger living on Prince Edward Island. By examining all Prince Edward Island communities and assessing the school readiness of every kindergarten-age child, we have made some discoveries about how our communities and families interact and about how these interactions can either enhance or stunt children’s development.

Compared to the rest of Canada, most of PEI has below-average socio-economic ratings. Normally that means greater risks for children, but, surprisingly, UEY results show that:

• our communities have a high capacity to support healthy child development; and
• most of our children are successfully meeting their developmental challenges.

Prince Edward Island can be proud of its high scores on community indicators of social support, social capital, and the quality and safety of its neighborhoods. However, there is always room for improvement. PEI children could benefit from
improved family functioning and parental engagement, and also better access to educational and cultural resources.

With a questionnaire called the Early Development Instrument, we ask kindergarten teachers questions about how ready their students are to begin learning at school. The questionnaire has been completed three times on PEI, and we will do it again in 2004. With four years of data, we will have excellent information about how well parents and communities are supporting children’s development from birth to age five.

A Community Mapping Study completed in 2000 gathered information about the physical and socio-economic characteristics of young children’s neighborhoods, and the programs and services available to them and their families. Although this component of the UEY research program shows that Charlottetown and Summerside offer many programs and services, the province needs to work to ensure that all children, including those in less urban areas, have access to resources that support early development.

**Champions for Children**

As part of our effort to help communities learn from the UEY information, we’ve developed regional community profiles that present the research information in a condensed, community-specific format. Across the Island, volunteers who work with or for children have agreed to “champion” the UEY work in their communities.

UEY Champions are equipped with the regional profiles and are doing a wonderful job of showing people how their communities can better support children in the first years of life. We look forward to continuing to support UEY Champions with resources and professional development, as they are the key to supporting communities. With this bottom-up approach, we will make a difference to the lives of PEI’s children and families for years to come.

Through Understanding the Early Years, we have made immense progress in supporting those who care for children and families, and in encouraging a broader understanding of how our communities affect early development. UEY information is being used by early childhood educators and other community leaders to help plan schools, early childhood centres, and communities, as well as policies and programs for the whole province. Many early childhood centres have asked us to present UEY findings to their staff and board members. We have also shared information at conferences, and with community organizations, school boards and associations, and government committees.

Prince Edward Island’s Understanding the Early Years will be completed by 2005. In our last year we will again gather data about children and the communities in which they live to gauge how well we have supported community learning. While the funding will eventually end, we believe that UEY has encouraged communities to focus on the important early years of development, and stimulated a wide variety of groups to collaborate for the good of our province’s children and families.

Sarah Henry Gallant was project coordinator for PEI’s Understanding the Early Years site from December 1999 to July 2003. She is now a researcher with the Province of PEI, in the Department of Health and Social Services.

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ECDA Web site: www.ecda.pe.ca

For more information about UEY across Canada, see HRDC’s Web site: www.hrdc-drhc.gc.ca/arb/nlscy-elnej/uey.shtml.

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**PEI’s Children & Families: A Few Findings**

- Young children in PEI scored above the NLSCY national averages for vocabulary and cognitive development, and above average for school readiness as measured by the Early Development Instrument.

- Close to 10% of PEI children “scored poorly for aggression/conduct disorder,” and almost as many “had low scores for positive behaviour.”

- “Despite relatively low levels of socio-economic status, Prince Edward Island had high scores on community indicators describing its levels of social support, social capital, and the quality and safety of its neighbourhoods.”

- About 20% of families have low incomes, and almost 21% are led by single parents.

- “Few residents move within or out of the province.” Staying put may help PEI families “take advantage of strong community and social resources,” which “undoubtedly contributes to PEI’s success in achieving high levels of children’s outcomes.”

- Parents in PEI have “relatively strong parenting skills,” yet their children would benefit from improved family functioning and “greater parental engagement in children’s learning activities, which was the province’s weakest area. The community could also strive to improve children’s access to educational and cultural resources.”

—adapted from Understanding the Early Years: Early Childhood Development in Prince Edward Island by J. Douglas Willms (KSI Research International Inc. and HRDC, November 2001)
Raising Canada’s Learning Bar

How can we help every child in Canada learn what they need to know to prepare for the future? J. Douglas Willms, Director of the Canadian Research Institute for Social Policy at the University of New Brunswick, talks about how Canadian teens compare academically to teens in other countries and to each other. The huge gap between Canada’s best and worst students shows the need for a level playing field. Dr. Willms suggests ways to narrow the gap and raise the learning bar for all.

Last spring nearly 30,000 15-year-old Canadian students participated in the Programme for International Student Assessment (PISA), a survey of their skills in three literacy domains: reading, mathematics, and science. The Organisation for Economic Co-operation and Development (OECD) is conducting the survey every three years to assess young adults’ ability to use their knowledge and skills to meet the challenges facing them as they approach the end of compulsory schooling.

We won’t know the 2003 results for at least a year, but Canadian students overall fared exceptionally well in 2000, when the first PISA survey was conducted. In that year the focus was mainly on reading performance, in which Canada ranked second among 32 participating countries. Ten years ago, Canada was usually in the middle of the pack in international assessments such as PISA, with scores similar to that of the United States. In reading performance we are now one of a group of eight top-scoring countries, along with Australia, Finland, Japan, Korea, Ireland, New Zealand, and the United Kingdom.

PISA assesses students in several ways, including a series of written tasks that measure reading, mathematical, and scientific literacy, as well as a questionnaire that asks about their family background, their experiences at school, and their attitudes towards learning. The survey was developed by a team of international experts, with input from teachers and employers about the kinds of skills students need when they enter the labour market or pursue further education.

This year’s PISA focused on mathematics, and in 2006 it will emphasize science. Math and science skills are especially important in a knowledge-based economy. The demand for youth who are highly skilled in these domains continues to increase. Moreover, there is broad agreement among researchers and the policy community that the skills measured in PISA are critical to employment and to sustained growth in the new economy, and that they are precursors to the long-term health and well-being of our youth.
The architects of Canada’s Innovation Strategy—a federal government project to build a skilled workforce and an innovative economy—have named a number of “milestones” to aim for in the future. Two of these are for Canada to become one of the world’s top three countries in math, science, and reading achievement; and for all students who graduate from high school to achieve a level of literacy sufficient to participate in the knowledge-based economy.

However, as of 2000, Japan and Korea continue to lead the world in mathematical and scientific literacy, with third place occupied by New Zealand for math and by Finland for science. Canada ranks sixth in math and fifth in science. Moreover, the learning bar is not level: there are large differences between Canadian youth from advantaged and less advantaged backgrounds, and we have many students graduating from high school with very low levels of skills in math and science.

To reach the Innovation Strategy milestones, Canada must raise literacy levels, especially for those from lower socio-economic backgrounds. A key question for families, educators, employers, and policy-makers is, How can we raise and level the learning bar?

**The Learning Bar**

The term “learning bar” is used here as a metaphor for what social scientists refer to as a socio-economic gradient. In education, a socio-economic gradient depicts the relationship between student performance and the socio-economic status of the student’s family. PISA uses a composite measure of students’ economic, social, and cultural background derived from their descriptions of their parents’ education and occupation, and the material and cultural possessions in their home. The measure is scaled to have an average of zero for all OECD students. Students with a score below –1 on this scale fall in the bottom sixth of OECD students for socio-economic status, while those with a score above 1 are in the top sixth.

The chart below shows the socio-economic gradient for Canada (black line) and for all OECD countries combined (grey line). The small black dots are students’ scores on the PISA reading test plotted against their family’s socio-economic status, for a representative sample of 2,000 Canadian students.

Canadian students scored above those in other OECD countries, on average. Also, Canada’s gradient is more gradual, indicating less inequality associated with students’ socio-economic status. However, not all Canadian youth are achieving their potential, and overall we fall well short of the goals set by our Innovation Strategy.

Canada’s results show a wide range of reading scores at all levels of socio-economic status. What is particularly worrisome is that many students scored at Level II or lower. (Reading achievement is divided into five levels, with Level V being a very high level of literacy. Students who perform below Level I may have some literacy skills but find it very difficult to use reading as a tool to advance their knowledge in other areas.) The threshold between Levels II and III is important because students at Level III are much more likely to go on to a post-secondary school than those at Level II.

More detailed analyses of the PISA data for Canada show large gaps in reading, math, and science achievement associated with socio-economic status, gender, and ethnicity. There are also large variations among the ten provinces: after account is taken of students’ family backgrounds, Quebec and the four Western provinces have the highest scores, while Ontario and the Atlantic provinces have the lowest scores.

**Five Strategies for Raising and Leveling the Bar**

Raising Canada’s learning bar cannot be achieved simply through education reforms such as changing the curriculum, reducing class size, or putting more computers in the classroom. We need a more comprehensive approach that involves families, teachers, community leaders, employers, and the broad policy community.

PISA is not simply an assessment of what youth learn in high school, or even during their entire school career. It is an indication of the skill development and learning that occur both in and out of school, right from birth until age 15. Clearly then, a country’s results on PISA depend on the quality of care and stimulation given to children during infancy and the pre-school years, and on children’s opportunities to learn—in school, at home, and in the community—during the elementary- and secondary-school years.
A comprehensive approach to raising Canada’s learning bar might include these five strategies:

1) Safeguard Infants’ Healthy Development

The brain development of infants from conception to age one is much more rapid and extensive than neuroscientists believed ten years ago. Recent research has also shown that brain development is heavily influenced by an infant’s environment.

A newborn has billions of neurons, which, during the course of development, form connections called synapses in response to environmental stimuli. While this is happening, many of the neurons not being used are pruned away. This process of synapse formation and neuron pruning is often referred to as the “sculpting” or “wiring” of the brain. Moreover, there are critical periods, especially during the first three years, when particular areas of the brain are sculpted. Scientists now believe that infants receive signals from their environment that alter and become “embedded” in certain physiological and neurobiological systems, thereby affecting later cognitive development, behaviour, and health.

These recent findings are substantiated by the work of social scientists who have shown that population interventions such as home visitation programs, combined with parent training and support, have long-lasting effects on a wide range of children’s outcomes. Taken together, such findings provide a powerful argument that care and stimulation during the early years are critical to establishing a foundation for learning, positive behaviour, and health.

2) Strengthen Early Childhood Education

The number of children being cared for outside the home in various types of care arrangements has increased steadily for the past 25 years. Research on the quality of early child care emphasizes the importance of low child-to-adult ratios, highly educated staff with specialized training, and good facilities and equipment to provide stimulating activities. It is these dimensions of quality that distinguish “day-cares,” with a custodial function, from early childhood development centres, which emphasize growth in children’s development.

Studies in several countries demonstrate that the quality of care offered in early childhood development centres affects children’s linguistic, cognitive, and social competence. The Canadian research suggests these effects may be particularly strong for children from low-income families.

Despite this strong evidence, we do not seem to be much closer to achieving universal early childhood education in Canada than we were ten years ago. It is very difficult to estimate what effect universal provision would have on the long-run educational results, or the health, of Canadian children and youth. However, we do know that environments that expose children to a quality and quantity of language and the opportunity to play and engage in stimulating activities, have strong, measurable effects on children’s cognitive and language development. And we also know that skills in these domains are highly predictive of future academic success.

3) Improve Schools and Communities

With the PISA data, it is possible to estimate the range in students’ scores from the worst- to the best-performing schools. In Canada this range is more than 100 points—roughly equivalent to one-and-a-half years of schooling for 15-year-old students.

The Canadian PISA results suggest that the most important determinants of a school’s success have to do with the social and disciplinary climate of the classroom, teacher-student relations, and the extent to which the school emphasizes academic achievement. School resources and the staff-to-student ratio are also important but less so. In a successful school, teachers are more likely to be specialists in their subject area, and the principal usually has greater autonomy in running the school. We also know from other research that student performance is higher in schools that practice heterogeneous grouping and team teaching, and in schools with a high level of parent involvement.

Some school reformers argue that to raise and level the bar we need to “restructure” schools to be more supportive and responsive to student needs, and to have a stronger orientation towards achieving success for all children. The models for reform are consistent with the messages from PISA: they emphasize prevention over remediation, a highly contextualized curriculum with strong components in reading and language, parent participation, and greater control for teachers and principals in managing school affairs.
4) Reduce Segregation and the Effects of Poverty

One of the core findings of PISA is that there is a “contextual effect” on student performance associated with the average socio-economic status of the school, over and above the effects associated with students’ individual family socio-economic status. This was evident in every participating country. For example, if a child of average socio-economic status attends a school with an above-average socio-economic status, the child will likely perform better than if he or she attends a school with a below-average socio-economic status.

Schools with a higher average socio-economic status tend to have several advantages associated with their context. In most countries they are more likely to have good resources—more computers or better-trained teachers, for example. They are also more likely to have an atmosphere that is conducive to learning, with fewer disciplinary problems, higher expectations for academic success, and greater parent support. Then too, positive peer effects happen when bright and motivated students work together. For these reasons, when students are segregated into different classes or tracks within a school, or into different schools within a community, students from advantaged backgrounds tend to do better, while those from disadvantaged backgrounds tend to do worse.

In Canada, as in many countries, children from differing family backgrounds are segregated to some extent due to residential segregation, especially within large cities. The PISA data reveal that there are over 200 Canadian schools with a concentration of children from disadvantaged backgrounds. Although it is difficult to reduce school segregation stemming from residential segregation, this can be accomplished to a degree by setting the geographical boundaries of school catchment areas with a view to achieving a heterogeneous mix of students within each school.

Some school districts have an “open enrollment” policy that allows parents to choose a school outside their designated catchment area. This might seem likely to decrease socio-economic segregation, but, ironically, it can actually contribute to it. Well-to-do families are much more likely than other families to enroll their children in school choice programs such as French-immersion, magnet schools, and charter schools.

An important strategy for raising and levelling the bar is to avoid segregating youth into low and high socio-economic-status schools or programs. However, this is only the first step. We need strong leadership in schools and communities to promote social inclusion. This agenda would concentrate not only on reducing segregation associated with gender, ethnicity, disability, and economic disadvantage, but also on recognizing and valuing student diversity, safeguarding students’ rights to participate in mainstream activities, and providing access to the psychic rewards of schooling.

Parents and community leaders can promote social inclusion by encouraging inclusive structures and practices that meet the needs of diverse students. Doing so requires creating a different framework of understanding and values among parents of students in high-status classes and schools, and among the principals and teachers who work in those settings.

5) Create a Family-enabling Society

The National Longitudinal Survey of Children and Youth (NLSCY) is a large, ongoing survey following children from birth to adulthood. Conducted by Human Resources and Economic Development Canada in cooperation with Statistics Canada, the NLSCY has contributed to our understanding of how to raise and level the bar. The primary message of this research is that the quality of children’s environments within their families, their schools, and their local communities, has a very strong effect on cognitive and behavioral development, and on the prevalence of childhood vulnerability.

Research based on the NLSCY calls for us to shift our thinking from seeing childhood vulnerability as a problem that stems simply from poverty and single parenting to seeing it as a problem arising from the environments in which children are raised. The important factors are parenting skills, the cohesiveness of the family unit, the mental health of the parents, and the extent to which parents engage with their children. These factors affect, and are affected by, the neighbourhood, the school and the wider community.

The social policy mandate to raise and level the bar requires more than simply offering parenting programs, increasing early childhood education, or improving schools. We need to renew social policy so that families and communities receive the support they need to raise their children well.

J. Douglas Willms, Ph.D., is Director of the Canadian Research Institute for Social Policy at the University of New Brunswick, and he serves on the expert advisory groups for the OECD Programme for International Student Assessment and for Canada’s National Longitudinal Survey of Children and Youth. Dr. Willms edited the book Vulnerable Children (University of Alberta Press, 2002), in which leading scholars present NLSCY findings.

For more information about the Programme for International Student Assessment (PISA), visit the Web site of the Organisation for Economic Co-operation and Development (www.pisa.oecd.org) or the PISA Canada site (www.pisa.gc.ca).
"Family and Work: Seeking a Healthy Balance"—that's the theme of this year's National Family Week® to be held October 6-12. Most of us know what it's like to feel conflicted about work. We work to provide for our families, but work takes us away from our families. The organizers of National Family Week®—14 organizations led by Family Service Canada—want to focus the nation's attention on the importance of helping families reconcile the need to work and the need to spend time together.

Visitors to the Family Service Canada Web site (www.familyservicecanada.org) can download a free "kit folder" of articles and information about resources, activities, and links on balancing work and family. To have a kit folder mailed to you, along with added items like stickers and magnets, send an e-mail request to info@familyservicecanada.org.

Society's "third pillar"—the nonprofit/voluntary sector—shows signs of cracking under the strain of the short-term, project-based funding now favoured by governments and many other funders, according to a new study released by the Canadian Council on Social Development (CCSD).

"Organizations are being forced to scramble more than ever to find financial support because their funding is increasingly unstable," says CCSD's Katherine Scott, author of Funding Matters: The Impact of Canada's New Funding Regime on Nonprofit and Voluntary Sector Organizations. "And that disproportionate focus on fundraising—in a highly competitive arena—diverts them from their primary mission, which is to help meet the needs and enrich the lives of Canadians."

To read the full report, visit the CCSD Web site at www.ccsd.ca.

Another CCSD release says the 2001 Census figures on income tell us two very important stories. "The first is that Canadian society is becoming increasingly polarized. The richest 10% of our population has seen its income grow by a whopping 14% while the bottom 10% has seen only a slight increase of less than 1%. Moreover, the income of many working families has actually declined."

In a Web page called "Census Analysis," the CCSD goes on to say, "The second story is that we have been unable, as a nation, to tackle poverty in any meaningful way. The economic boom of the last part of the decade has clearly not benefited most Canadians, and it has failed to put any real dent in Canadian child poverty rates."

Especially interesting are CCSD's comparisons of incomes in cities across Canada in 2001:

- "Family incomes were most unequal in Toronto and Vancouver."
- "Family incomes were most equally distributed in Quebec City, Oshawa, Sherbrooke, and Victoria."
- In Montreal, the median income of families was $53,385; in Ottawa, it was $69,518; in Toronto, $63,700; and in Vancouver, $57,926. The national median was $55,016.

"Census Analysis" is available at www.ccsd.ca/pr/2003/censusincome.htm.

A new report looks at two practices that can make it easier for employees to harmonize their work and family responsibilities: part-time work and "family-friendly" work arrangements such as flextime, telework, child care, and services to help care for the elderly. Entitled Part-time Work and Family-Friendly Practices, the report from Statistics Canada and Human Resources Development Canada is based on data from the 1999 Workplace and Employee Survey.

According to the report, most companies do not promote the integration of work and family through formal workplace practices. Although about a third of Canadian employees report having flextime schedules, access to other family-friendly work arrangements is extremely low.

Such access seems to be a function of the type of work performed and company characteristics such as size and industry, not the personal needs or family characteristics of employees. Access is generally highest among well-educated employees in managerial or professional jobs. Flextime and telework were most available to employees in small workplaces.

For the full report, see either www.statcan.ca or www.hrdc-drhc.gc.ca/arb.

At the University of Guelph, Professors Joan Norris, Scott Maitland, and Joseph Tindale are pursuing a research interest in intergenerational support among members of stepfamilies with adult children.

There are now two Masters theses in progress: Shannon Golletz is collecting data from adult children about the kinds and amounts of intergenerational support they have given and received, and Tara Dwyer is exploring similar questions with a sample of grandparents in stepfamilies. The long-term goal for the study is to pursue these questions using a larger sample and with three generations represented within each family.

To find out more, contact Professor Joseph Tindale, Professor and Chair of the Department of Family Relations and Applied Nutrition, at jtindale@uoguelph.ca.

Marshmallow Math is a new book that shows parents how to teach basic number concepts to young children. Subtitled Early Math for Toddlers, Preschoolers, and Primary School Children, the book aims to fill a gap between simple toddler counting books and math exercise books. Instead of relying on traditional paper-based exercises, author Trevor Schindeler offers fun activities using counting objects and other learning aids to make abstract concepts more concrete. Marshmallow Math can be ordered from amazon.ca (for $18.12) or at www.trafford.com (for $19.95).

The Voluntary Sector Evaluation Research Project is a three-year initiative to "improve the capacity of voluntary organizations to evaluate their work and communicate their effectiveness to their funders, stakeholders, and the public." A joint initiative involving many partners—including the Canadian Centre for Philanthropy, Carleton University, and Volunteer Canada—VSERP has a Web site (www.vserp.ca) with publications, links, and other resources related to evaluation.
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