

About Innovation



A **focus paper** presented by the
Nova Scotia School Boards Association

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Key messages about innovation

- ▶ We need to redesign schools (at least middle and high schools) in order for students to be able to acquire 21st century skills.
- ▶ Further incremental improvement to the current system will not create 21st century schools.
- ▶ Innovation takes place “on the ground”—in classrooms and schools.
- ▶ The tight relationships among the building blocks of school (curriculum, courses, credits, timetabling, assessments, and teacher assignments) make it difficult to turn local innovations into larger-scale sustainable innovations.
- ▶ There are ways to facilitate the spread of on-the-ground innovations and to generate and test new ideas. Successful prototypes can be *scaled out* to other schools for further testing, then *scaled up* for the benefit of all schools if the evidence calls for system-wide transformation.



Founded in 1954, Nova Scotia School Boards Association (NSSBA) is the provincial voice for school boards across the province. NSSBA engages with its members and partners to raise awareness of public education in our province while helping students achieve their potential. All of the services offered by NSSBA are designed to enhance the effectiveness of its eight member school boards.

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About this paper

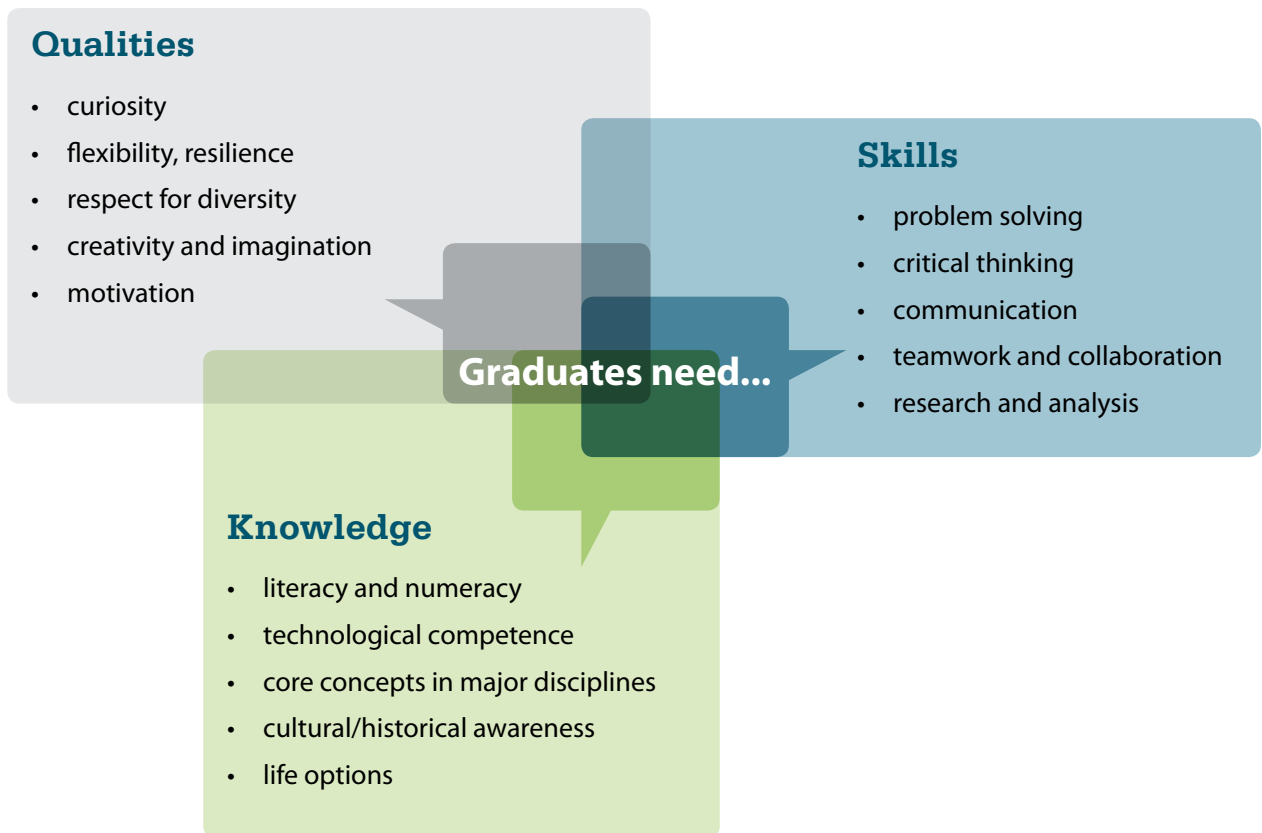
The time is right to reinvent schooling for the 21st century. This paper offers a disciplined approach to radical transformation in public education. It argues in favour of turning high-performing classrooms and schools into hubs for innovation, where new ideas are developed and tested to meet clearly defined needs, and where all stakeholders collaborate. In this approach to transformation, successful innovations are scaled out to other schools for further testing, then scaled up for the benefit of all schools if the evidence calls for that.

The focus of this paper is on promoting innovation in middle and high schools because that is where change is most needed and where it is hardest to sustain.¹

The call for innovation is grounded in the assumption that the first priority of public schools is to equip students to learn and thrive in the present and future. Figure 1 summarizes the qualities, skills, and knowledge that we believe students need to succeed in school and in life. We propose these as goals or desired outcomes for public education.

Figure 1

Qualities, skill, and knowledge that graduates need



1 Andy Hargreaves and Ivor Goodson, "Educational Change Over Time? The Sustainability and Nonsustainability of Three Decades of Secondary School Change and Continuity." *Educational Administration Quarterly*, 42, no.1 (February 2006): 3-41.

The Nova Scotia School Boards Association (NSSBA) laid the foundation for these goals in the discussion paper, *Shaping a New Vision for Public Education in Nova Scotia* (April 2014). We describe ways to achieve the goals in three focus papers:

- *About Innovation* (this paper)
- *About Engagement*
- *About Learning*

The papers in this series were drafted for NSSBA by Penny Milton, former CEO of the Canadian Education Association. We offer them enthusiastically to the Minister's Panel on Education and to all Nova Scotians.

All four papers are available online at nssba.ca/research-resources.

Why change now?

By most available measures, Canada has one of the best public education systems in the world. Consider this:

- The Programme of International Student Assessment (PISA) consistently ranks Canada among the few top-performing countries in reading, mathematics, and science. Furthermore, Canada's PISA results show a narrower gap between low and high achievers than almost any other nation, indicating that our education system offers more equitable outcomes for students.
- High school graduation has substantially increased. Ninety-two per cent of Canadians aged 25–34 have secondary diplomas, compared with 83 per cent of the older population. In Nova Scotia, 82 per cent of students graduate at the end of the standard three years of high school, compared with the Canadian average of 74 per cent.²

Today's schools are successful at equipping most students for graduation. But they are less successful at preparing graduates for life beyond school.

Canadian research shows that middle and high school students report quite low levels of intellectual engagement in their schoolwork, even when they are succeeding at school. Record numbers of high school graduates are pursuing post-secondary education, but they are entering adulthood with high debt, low-to-mediocre prospects for gainful employment, and disheartening uncertainty about their way forward. Further incremental improvements to the existing school system will not improve the real-life outcomes for future high school graduates.

Two new and notable reports reinforce NSSBA's vision for reinventing public education to meet the complex challenges of the 21st century:

- *Equinox Blueprint: Learning 2030*³
- *A Rich Seam: How New Pedagogies Find Deep Learning*⁴

These reports call for new curriculum, pedagogy, assessment, technology, teaching capacity, and leadership—in short, a new way to do school.

What we now need are ways of getting there—ways that transform the outcomes we have today into those we aspire to for all students. Some stakeholders have argued that the current system of improvement planning points in the right direction, and that schools should continue on that path. Others call for a paradigm shift, from improvement planning to innovation. But it does not have to be an either/or choice for education leaders. The two approaches can work together.⁵

2 *Education Indicators in Canada: An International Perspective—2013*. (Ottawa: Canadian Education Statistics Council, 2014), 24–27, cmec.ca/Publications/Lists/Publications/Attachments/322/Education-Indicators-Canada-International-Perspective-2013.pdf.

3 Michael Brooks and Bob Holmes, *Equinox Blueprint: Learning 2030*. (Waterloo: Waterloo Global Science Initiative, 2014), wgsi.org/equinox-summit/equinox-summit-learning-2030.

4 Michael Fullan and Maria Langworthy, *A Rich Seam: How New Pedagogies Find Deep Learning* (London: Pearson, 2014), michaelfullan.ca/wp-content/uploads/2014/01/3897.Rich_Seam_web.pdf.

5 Carol Campbell and Penny Milton, "Implementation and Innovation: The Route to Equity," *Education Canada*, 51, no. 5. (Canadian Education Association, 2001), cea-ace.ca/education-canada/article/implementation-and-innovation-route-equity

A disciplined approach

Innovation in education is not about “experimenting on our kids” with new-fangled ideas. It is about the purposeful design of learning environments that cause students to think, research, analyze, develop and improve their ideas, and demonstrate deep understanding through the work that they produce. Better ways to teach are created using the best available research about how people learn, what interests the students, and what we want them to achieve. It is a disciplined process.

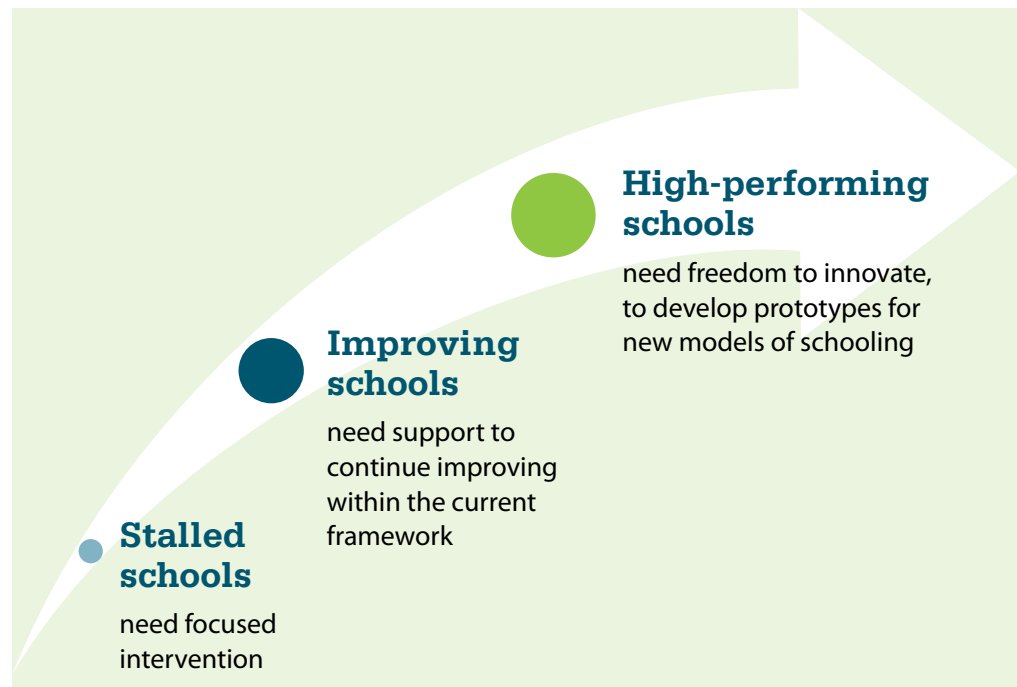
Peter Drucker emphasizes the value of discipline in the pursuit of innovation:

There are, of course, innovations that spring from a flash of genius. Most innovations, however, especially the successful ones, result from a conscious, purposeful search for innovation opportunities, which are found only in a few situations.⁶

Figure 2 shows how improvement planning and innovation can work together.

Figure 2

A disciplined approach to radical transformation in public education



6 Peter Drucker, “The Discipline of Innovation,” *Harvard Business Review*, August 2002, hbr.org/2002/08/the-discipline-of-innovation/ar/1.

Improvement strategies can and should continue in stalled and improving schools.

Stalled schools are schools where gains in student achievement have been static or minimal over time. These schools need focused intervention, which may include (for example): highly effective instructional leadership from principals;⁷ finding out what students are experiencing in classrooms; and mobilizing parents to support improvement.

Improving schools are those that have been demonstrating ongoing academic improvement over time. Support for these schools may include (for example): expanding collaboration among teachers; encouraging new ways to teach; engaging students in assessing their school and naming their aspirations for teaching and learning in the school and in their classrooms; and attending to the ethos of the school and classrooms to ensure that learning is the focus of the organization.

High-performing schools have these characteristics:

- academic achievement is high or has significantly improved
- school conversations often focus on the qualities, skills, and knowledge students need today
- leaders and teachers have worked together to design new approaches

High-performing schools are success stories by current measures; there is little room for them to improve within the existing framework of education. These schools could become the innovation hubs where students, community members, teachers, and principals work together to develop and test new models of schooling.

To qualify as an innovation hub, a school should be required to commit to three unwavering rules or minimum specifications:

- The school is a safe place for students and adults.
- Students achieve the graduation goals set by the system (the qualities, skills, and knowledge identified in Figure 1).
- Enrolment cannot depend on a student's prior academic achievement.

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7 Nova Scotia has taken some significant steps to build instructional leadership among principals. In June 2014, the first cohort of principals graduated from Nova Scotia's Instructional Leadership Academy. Read the press release at novascotia.ca/news/release/?id=20140609003.

Scaling out and scaling up

New models of schools that overcome intractable problems—dropping out, underachievement, and disengagement, and that explicitly nurture 21st century skills—are not hard to find. They are most likely to be found in alternative, charter, and specialist schools.⁸ These alternatives may demonstrate new ways of learning, but they have not done much to-date to help us understand *how* to transform regular schools to meet the needs and interests of all students, because that is not what they were designed to do. Alternative, charter, and specialist schools exist as self-contained entities, not as prototypes for other schools. A prototype, by definition, exists to test something and to make it better.

In the approach described in Figure 2, selected high-performing schools become prototypes for new ways of doing school.

Education leaders need to understand and create the conditions for innovation in high-performing schools, and extend the lessons learned—classroom to classroom, school to school, and system wide—until all students are thriving in a Nova Scotia-grown culture of innovation.

The spread of promising innovations among schools can be called **scaling out**, as distinct from **scaling up**. *Scaling out* means the spread of the idea or approach to other selected sites. *Scaling up* means changing the whole system.⁹ Scaling out provides opportunities to test and refine the innovation. If the evidence supports a call for system-wide transformation, the innovation can be scaled up—for example, by changing provincial policies and reallocating budgets.

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8 For example, see
• Connect Charter School, fz.calgaryscienceschool.com/wordpress
• High Tec High, hightechhigh.org
• Seven Oaks MET School, 7oaks.org/school/themet/About/Pages/default.aspx
• Claude Watson School for the Arts, claudewatson.org

9 Frances Westley and Nino Antadze, "Making a Difference: Strategies for scaling social innovation for greater impact," *The Innovation Journal*, 15, issue 2, article 2, innovation.cc/scholarly-style/westley2antadze2make_difference_final.pdf.

Barriers to transformation

In one sense, change in schools is constant. The Department of Education reviews curriculum; updates resource lists; negotiates collective agreements; and amends or adds new regulations. At the school level, teachers and students invent new and often better ways of doing things. But all of these efforts have not added up to a transformation of schooling to meet students' needs today. This should not be a surprise. Complex public systems have little capacity to make big changes.

These are some of the barriers that prevent innovation and system-wide transformation:

- tight interconnectivity of the parts that make the whole
- centralized policies
- inflexible implementation planning
- fear of failure and risk of exposure

Interconnectivity of parts that make the whole

In education, the tight coupling of curriculum, course approval, credit hours, hours of instruction, timetables, and more, combine to create seemingly insurmountable barriers to transformation. Even when one aspect of school changes, the remaining requirements quickly pull the organization back to its traditional ways.

In a retrospective study of long-term educational change, Hargreaves and Goodson concluded that insufficient attention to the context—external and internal—results over time in a return to “traditional identities and practices of conventional high schools.” Even innovative schools are pulled back toward more traditional forms.¹⁰ These authors write, “standardization is proving to be the ultimate enemy of enduring innovation and sustainable learning communities.”¹¹

Centralized policies

Centralization makes it easier to monitor a system but harder to improve it. The interaction among all of the policies and practices of the education system—regarding curriculum, assessment, human resources, facilities, schedules, and more—contribute to a belief that “system elements are currently the strongest barriers to change.”¹² This explains at least in part why schools that have gone furthest in achieving “deep learning” with students tend to be charter or alternative schools. Policies that govern the creation of these schools intentionally limit the requirement of these schools to abide by many of the rules that govern mainstream schools.

10 Hargreaves and Goodson, “Educational Change Over Time,” 3-41.

11 Hargreaves and Goodson, “Educational Change Over Time,” 34.

12 Fullan and Langworthy, *A Rich Seam*, 73.

One solution when system elements stand in the way of change is to exempt schools under specified circumstances from key rules to enable them to work differently.

Consider this...

The **Alberta High School Flexibility Pilot Project** offers an example for testing an exemption to a specific rule. Initially 16 high schools were exempted from the requirement to teach in courses of 25 instructional hours.* The removal of this barrier allowed different experiments in the ways curriculum was organized, students were grouped for instruction, and teacher time was allocated. The three-year project resulted in a unanimous recommendation of the schools and their district leaders for the removal of this 25-hour credit requirement.

* Gerry Fijal, *Alberta High School Flexibility Enhancement Pilot Project. Summary Report—2013* (Alberta Education, 2013), ideas.education.alberta.ca/media/78910/hsepp_report_2013final.pdf.

An initial policy exemption can allow schools and the province to test a policy idea in practice in advance of a decision to change a policy for the whole system. This change process offers a lower-risk option for testing new ideas before imposing them on the whole system.

Inflexible implementation planning

The centralization of policy-making since the 1990s has limited the sources and scope of innovation. Provincial policy invariably applies to all school districts, and implementation plans determine how policy objectives are achieved, with little room for flexibility. In this centralized approach, promising ideas are often diluted in order to gain the cooperation of major stakeholders. Little space is created for finding better ways to achieve the goals.

Consider this...

Alberta's **Curriculum Redesign** strategy offers an example of local policy development within a centralized education system. The strategy establishes new multi-stakeholder partnerships led by school authorities. Implementation issues then get worked out during the development stage under actual operating conditions.*

* education.alberta.ca/department/ipr/curriculum.aspx

Fear of failure and risk of exposure

Decision-makers in education often don't know about innovations developed through informal projects or initiatives that an individual school or school board has undertaken. Teachers and principals may choose not to broadcast initiatives or different ways of doing things if they suspect that those in authority would disapprove of them. This problem of hiding good works can be exaggerated in highly standardized or centrally controlled environments.

Consider this...

There is an antidote to hiding good works. School boards could encourage schools to bring forward locally developed examples of innovative practices. The boards could ask schools what they did, how they did it, with what outcomes, and what they thought it would take to do it more often. And they could spread the word.

The Department of Education could invite school boards to come forward with alternative implementation strategies that might better suit specific contexts.

Nova Scotia has used this strategy in the past. In 1997, the Minister of Education announced the creation of the **Junior High School Network** to bring forward exciting and innovative projects that promoted student success in order to reach more students in more schools across the province.* It's time to renew and expand the strategy.

* EDUCATION/CULTURE--Successes Shared Through Junior High Network. November 25, 1997. Media Archive. Nova Scotia.

The key is for the school board and the Department of Education to “stand by the side” of schools attempting major changes, and to be helpful and supportive. Too often, innovative leaders in schools feel judged rather than encouraged and supported. We need to decrease the risk involved in failure by working collaboratively with schools to help them succeed in their efforts to change.

Creating the conditions for strategic innovation

A number of governments in Canada and internationally have begun to create organizations and strategies to foster a new capacity for innovation in public services. All are motivated by complex problems needing fresh solutions. Many focus on the growing field of social innovation, often based in the experience of not-for-profit social enterprises; some specifically focus on public sector innovation.

Frances Westley, a leading Canadian scholar, defines social innovation this way:

*Social innovation is an initiative, product, process or program that profoundly changes the basic routines, resource, and authority flows or beliefs of any social system. Successful social innovations have durability and broad impact.*¹³

Social and public sector innovations require different processes and tools from those most commonly used for change in education. Traditionally, change in education involves the following:

- an internal or external review process that may or may not involve consultation with stakeholders
- drafting and approval of a new policy or law
- development of a funding and implementation plan

Well-established strategic planning results in three-to-five-year plans for improvement, but these do not usually deal with bold ideas about doing things differently. Bason compares what he calls strategic innovation and strategic planning (see Figure 3).¹⁴

Figure 3
Comparing strategic planning and strategic innovation

Strategic Planning	Strategic Innovation
Analytic	Creative
Focus on performance indicators	Focus on new insights
Internally focused (inside-out)	Externally focused (outside-in)
Logical, linear	Iterative, heuristic (discovering by doing)
Strategy for today <i>forecasted</i> to tomorrow	Strategy for tomorrow <i>back-casted</i> to today
Expand existing model	Alternative business models
Assumes future looks like today	Assumes future is dynamic
Follows rules and traditions	Breaks rules

¹³ Frances Westley, "Introduction to Social Innovation," SIG (Social Innovation Generation) Knowledge Hub, sigknowledgehub.com/2012/01/01/introduction-to-social-innovation.

¹⁴ Christian Bason, *Leading Public Sector Innovation: Co-creating for a Better Society* (University of Bristol, UK: The Policy Press, 2010).

The transformation of our education system requires leaders and stakeholders to embrace strategic innovation.

Innovation arises from seeing problems differently and imagining another way of doing things. It invariably depends for success on engaging all stakeholders in defining the problem and in creating solutions—in other words, a co-design process. This is critically important since divergent perspectives are more likely to give rise to different ways of stating the problem and different solutions. In the public sector, the stakeholders include service users as well as providers. For example, the stakeholder group for a curriculum redesign for high schools would include students, parents, teachers, employers, post-secondary institutions, subject experts, and researchers. The identification of stakeholders will depend on both the issue to be tackled and the system level at which the innovation is sought.

Several processes exist to bring diverse people and organizations together to define problems and identify possible solutions. Some schools and systems have used methods such as Future Search, Appreciative Inquiry, and World Cafe to generate new energy, new spaces to explore problems, and better ideas for action (see Figure 4). Methods such as these can help the public sector to bridge the traditional department silos and promote genuine collaboration.

Figure 4

**Three ways
to promote
collaboration and
support social
innovation**

Future Search™ is a three-day planning meeting involving at least 60–80 people drawn from all sectors with an interest in the topic or issue at hand, including those with resources, expertise, and authority to act on the outcomes of the meeting. This approach gets people to tell stories about their past, present, and desired future. Through dialogue they discover their common ground. Only then do they make concrete action plans. Find out more at futuresearch.net/method/whatis.

World Café™ is a way to engage diverse participants in conversations about specific topics or issues. The method is designed to generate insights, patterns, and collective discoveries concerning the context, experience, and possibilities for the topic. Find out more at theworldcafe.com.

Appreciative Inquiry (AI) is a method for studying and changing social systems (groups, organizations, communities). The method is appreciative in that participants share conversations about the best of what *is* in order to imagine what *could be*. They then work together to design a desired future. Find out more at appreciativeinquiry.case.edu.

Call to action

Studies of public-sector innovation and social innovation offer concepts, tools, and strategies that Nova Scotians can use to transform existing schools into places where students learn deeply and develop the qualities, skills, and knowledge to thrive in a complex world. To lead the transformation, school districts and the Department of Education will need to do the following:

- Support teachers to learn and collaborate with peers.
- Identify where innovations are needed.
- Create strategies and conditions for innovation (for example: exemptions from current regulation; alternative applications of resources).
- Investigate and co-design new policies with stakeholders (for example: new curriculum; new achievement standards for qualities, skills, and knowledge; accountability systems that focus on outcomes rather than processes).

People innovate within systems that encourage innovation. Successful innovation at an organization level (a school, a district, a province) requires a culture that values the very attributes we seek in young people—creativity, inquisitiveness, calculated risk taking, learning by doing, reasoned problem solving, and the capacity to learn as we go and apply what we've learned to what we do next.

We have the core qualities, skills, and knowledge to transform our public education system. What we need now is the courage and discipline to innovate.

Appendices

Appendix A Acknowledgement

The Nova Scotia School Boards Association sincerely thanks Penny Milton for working with our association to write the papers in this series. Ms. Milton has written and presented widely on many aspects of social policy. She is a former, long-serving Chief Executive Officer of the Canadian Education Association (CEA) and former Deputy Minister of the Ontario Premier's Council on Health, Wellbeing and Social Justice. She has supported public education as a teacher, parent, elected school board member, and staff officer with teacher and school board associations. In 2013, she and Debra Pepler conducted the External Review of the Halifax Regional School Board's Support to Rehtaeh Parsons.

Ms. Milton holds a BSc (Hons) from the University of Nottingham, a Certificate in Technical Teaching from Letchworth College, UK, and a Masters in Management from McGill University.

Appendix B Recommended resources

Videos

Christian Bason. "Co-creating for a better society" (14:45 minutes). Dansk Design Centre, Posted June 9, 2011. [youtube.com/watch?v=mGO2Sz4vIU8](https://www.youtube.com/watch?v=mGO2Sz4vIU8)

Penny Milton. "Innovators in Action" Speaker Series, Main Presentation Video (42:12 minutes). Waterloo Institute for Social Innovation and Resilience, Posted June 2010. sig.uwaterloo.ca/feature/penny-milton-innovators-in-action-speaker-series

Articles and reports

Christian Bason. "Design-Led Innovation in Government," *Stanford Social Innovation Review* (Spring 2013).

ssireview.org/articles/entry/design_led_innovation_in_government

Michael Brooks and Bob Holmes. *Equinox Blueprint: Learning 2030*. (Waterloo: Waterloo Global Science Initiative, 2014).

wgsi.org/equinox-summit/equinox-summit-learning-2030

Michael Fullan and Maria Langworthy. *A Rich Seam: How New Pedagogies Find Deep Learning*. (London: Pearson, 2014).

michaelfullan.ca/wp-content/uploads/2014/01/3897.Rich_Seam_web.pdf

Michele-Lee Moore and Frances Westley. "Public Sector Policy and Strategies for Facilitating Social Innovation." (Horizons Policy Research Initiative). sig.uwaterloo.ca/sites/default/files/documents/Public_sector_policy_Moore_Westley.pdf

Books

Christian Bason. *Leading Public Sector Innovation: Co-creating for a Better Society*. (University of Bristol, UK: The Policy Press, 2010).

Frances Westley, Brenda Zimmerman and Michael Patton. *Getting to Maybe: How the World Is Changed*. (Vintage Canada, 2007).

Innovation labs, hubs, and strategies

Alberta Education:

- *Curriculum Redesign*. An opportunity to review Alberta's provincial curriculum to ensure it is engaging, relevant, and enables students to reach their full potential. It includes partnerships and curriculum prototyping. education.alberta.ca/department/ipr/curriculum.aspx
- *Redesigning High School*. Research and "next-practice" thinking aimed at transforming the high school experience for students and teachers through changes to school structure, culture, pedagogy, or leadership. ideas.education.alberta.ca/hsc/redesigning

BC Partners for Social Action. A wide-ranging group of leaders seeking to implement recommendations, share information, and anticipate opportunities to maximize social innovation with social impact in British Columbia. socialimpactpartners.ca

Futurelab, National Foundation for Educational Research (NFER). Innovates teaching by involving teachers in research as part of their continuing professional development.
nfer.ac.uk/schools/enquiring-schools

MindLab, Denmark. A cross-governmental innovation unit which involves citizens and businesses in developing new solutions for the public sector. **mind-lab.dk/en**

Nesta. An innovation charity with a mission to help people and organizations bring great ideas to life. **nesta.org.uk**

Social Innovation Generation, University of Waterloo. A national collaboration addressing Canada's social and ecological challenges by creating a culture of continuous social innovation. **sig.uwaterloo.ca**

Social Innovation Lab for Kent. A small team based within Kent County Council that was set up in 2007 to "do policy differently."
socialinnovation.typepad.com/silk/about-silk-1.html